Mines and Mills of the Comstock Region Western Nevada

By Mary B. Ansari

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Dedicated

to my

husband

Nazir A. Ansari

FOREWORD

I was very pleased and flattered to be asked to say a few words about Mary Ansari's publication on the Mines and Mills of the Comstock Region. Mary has a long, abiding interest in the history of mining at the Comstock. She came to the University of Nevada, Reno twenty years ago, and she has been researching obscure sources of information on the Comstock every since. She has previously completed a study of Storey County place names, and this work is a continuation of her research on a fascinating area and time in Nevada's history.

I have often wondered about the name and history of a particular old mine or mill site along the Carson River or down Sixmile Canyon, but I never seem to have the proper reference source in hand. This new book fills that need, the desire of a "local" to know more of the mining history on his doorstep. Scholars will find much of interest in the book, but many of the thousands of visitors to the Comstock Lode at Virginia City will want to have it at hand to give them a hint of the past glories of Nevada's best known mining camp. And geologists, geographers, and cartographers will find it an invaluable source of information for such diverse uses as mineral exploration, map making, and historical preservation.

The mining rush to Nevada that began with the discovery of the Comstock Lode and nearby mining areas helped Nevada Territory become a state in 1864. But for all of its importance to the State, some aspects of its geology, history, and geography have been little studied. This book helps to fill that need.

Larry J. Garside
Nevada Bureau of
Mines and Geology
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ACKNOWLEDGMENTS

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Additionally, I am deeply indebted the University of Nevada-Reno for granting me a sabbatical leave which made it possible to complete the research and writing of this book.

ABBREVIATIONS

c. = circa
commun. = communication
fig. = figure
GHN = Gold Hill News
illus. = illustration
M & SP = Mining and Scientific Press
p. = page
pl. = plate
SCR = Storey County Records
sh. = sheet
SMR = State Mineralogist's Report
TE = Territorial Enterprise
WPA = Works Projects Administration

INTRODUCTION

Mines and Mills of the Comstock Region, Western Nevada is the result of my long-time infatuation with Comstock mining history which dates back to 1969 when I became the Mines Librarian at the University of Nevada-Reno. Over the years I have produced several reference indexes, bibliographies, monographs, and articles on Nevada mining, geology, and mapping. As a result of these research efforts, in the 1981/82 academic year I was granted a sabbatical leave from the University to conduct research on the place names of several northwestern Nevada counties. While researching the place names of Storey, Lyon, and Ormsby (Carson City) counties, I realized more than ever before that the information on the Comstock's extractive and reduction sites was extremely scattered, poorly indexed, if indexed at all, and very difficult to access through old newspapers, directories, government reports, manuscripts, journals, books, maps and court house records and needed to be brought together in some kind of logical order in a convenient reference format. Consequently, because of my high interest level in the subject and of my having the flexibility on my sabbatical to accomplish it, I proceeded to bring all this widely scattered primary and secondary source material together in one volume for convenient future access.

The result of this effort is a book on Comstock mines and mills which defines the Comstock as extending east from Washoe Valley to the mouth of Sixmile Canyon, and south from Cedar Hill and Sevenmile Canyon to the Carson River. Within this defined area the Comstock's major mines and reduction facilities are treated by geographic areas, such as Sevenmile Canyon, Virginia City, Sixmile Canyon, the "Divide," Gold Hill, American Flat, Silver City, Sutro, the Carson River, and Washoe Valley. Inside these geographic areas, the sites are covered in the known or approximate order of their locations from the heads to mouths of canyons and from west to east along the Carson River.

Coverage of the mines and mills includes descriptions of their locations in relation to other mines/mills/landmarks in the area, brief histories, production statistics and other available statistical data, information on the origins of their names when available, and documentation. The book's major emphasis is on the Comstock era dating from its earliest discovery in 1859 to the beginning of its decline in the late 1870s. Whereas many people hold the mistaken belief that the Comstock died after 1880, to the contrary it has continued to produce, though less spectacularly, to the present day. For this reason I have included some information on more recent mine and mill sites of importance.

A key to the abbreviations used in the text and references is included. The documentation for each chapter subdivision or section is included in parentheses at the end of the subdivision/section. References to books and maps are listed in an abbreviated format of author's surname followed by publication date and pagination. When the author is cited more than once, the works are differentiated by publication date, and the author's name is not repeated. Example: Kelly, 1862, 98; 1863, 151 means Kelly (author), 1862 (publication year), 98 (page); (Kelly), 1863 (publication year), 151 (page). Complete bibliographic references are given at the end of this volume.

References to the *Territorial Enterprise, Gold Hill News, State Mineralogist's Reports*, county records, and other serials are given only at the end of each chapter subdivision or section. Examples: TE, 1877, Oct. 11, 3:2; 1880, Jan. 10, 2:1 = *Territorial Enterprise* (newspaper), 1877, Oct. 11 (date), 3 (page), 2 (column); (*Territorial Enterprise*), 1880, Jan. 10 (date), 2 (page), 1 (column).

In conducting this type of research where many of the early records have been either lost, destroyed, altered, or never kept, inevitably the investigator runs into many errors that have been perpetuated and numerous conflicting reports. Consequently, this author would appreciate receiving any additions or corrections for future revisions of this work.

Mary B. Ansari
March 1989
The University Library
University of Nevada-Reno

Chapter 1

THE COMSTOCK DISTRICT AND VIRGINIA CITY

The Comstock Mining District

This world-famous mining district is centered around Virginia City and extends from the vicinity of Orleans Hill on the north to Silver City on the south and from Sixmile Canyon on the east to Mt. Davidson on the west. The legendary Comstock Lode, which makes up the heart of the district, was discovered in 1859 and by 1863 had produced an estimated $10,000,000 in silver and gold from near-surface deposits by relatively crude and unsophisticated mining and milling processes. The ore content of the Lode averages about 75 percent silver and 25 percent gold. From 1871-1880, the golden era of the Comstock, an estimated $200,000,000 was produced from approximately 4,000,000 tons of ore for an average value of $50 per ton. After 1880 production declined sharply but did not come to a screeching halt as some believe. The district's total production for the period 1880-1900 was a respectable, estimated $49,000,000 for an average value of $20 per ton. From 1900-1920 about $12,000,000 was produced yielding an average value of $10 per ton, and from 1920-1950 approximately $28,000,000 was produced. The district's total recorded production for the period 1859-1969 was an estimated $394,000,000.

The district is sometimes subdivided into the Virginia City District on the north, the Gold Hill District on the south, the Silver Star or Brunswick District on the east near the Brunswick Lode, and the Flowery District in the extreme east in the Flowery Range. The Silver City District in Lyon County is also included in the Comstock District. Originally the entire district and beyond was known as the Eastern Slope and later as the Washoe District or Washoe.

Since the Comstock Lode makes up the heart of this district, a brief historical sketch of its discovery is appropriate. Beginning in the early 1850s prospectors had been eking out livings on the placer gold deposits in Gold Canyon. Credit usually goes to Peter O'Riley and Patrick McLaughlin for being the discoverers of the Comstock Lode, but Ethan Allen Grosh, Hosea Ballow Grosh, and James Finney "Old Virginny" figure prominently in the events leading up to its discovery. The Grosh brothers were relatively sophisticated prospectors who most likely were the first to recognize the area's potential for silver mining. They worked in the vicinity of American Ravine near present-day Silver City from about 1853-1857 and wrote their father that they had found a massive vein of silver. Tragedy overtook the brothers, and they died before profiting from their discovery, taking the secret of its location with them to their graves. The story of the Grosh brothers is covered in more detail in Chapter 10 on Silver City.

Most accounts agree that in early 1859 James Finney (Old Virginny), Jack Yount, Alec Henderson, and John Bishop went up Gold Canyon to inspect a small yellow hill that Finney had noticed on a hunting trip. They washed a few pans of dirt that yielded about 15 cents of gold a pan, enough in those days to result in their each locating placer claims approximately 50 x 400 feet at the place they called Gold Hill. This find marked the discovery of the south end of the Comstock Lode but did not attract much attention at the time. Henry Comstock claimed to be one of the original Gold Hill locators, but apparently he, "Sandy" Bowers, Joseph Plato, William Knight, and James Rogers did not stake adjacent claims until a few days later. It was not long before some of the miners were making $20 a day at the "new diggings," but still the discovery did not create much excitement until the discovery of rich silver ore at the Ophir claim a few months later.

Most reports agree that in 1858 James Finney and some companions had prospected and staked a claim in the vicinity of what later was to become the heralded Ophir discovery, but they stopped working the claim because of troublesome clay, "blue stuff," and poor ground. In the spring of 1859 Patrick McLaughlin and Peter O'Riley uncovered a layer of rich, gold-bearing sand while digging out a spring in the vicinity of Spanish Ravine to increase its flow. The same evening Henry Comstock is reported to have ridden by, noticed

the rich discovery, and claimed that the men were trespassing on his ranch. Even though Comstock's story was a fabrication, in order to keep peace O'Riley and McLaughlin took in Comstock and his partner, Emanuel Penrod, as equal partners. These original locators were totally ignorant of the rich silver content of their discovery. They were working the claim as a gold placer and cursing the heavy bluish sand (silver) that clogged their rockers. This find marked the discovery of the north end of the Comstock Lode and the beginning of the famed Ophir Mine.

Sometime in June 1859 B.A. Harrison, a Truckee Meadows rancher, became interested in the "blue stuff" that was clogging the rockers and gave a sample of it to Judge James Walsh, a prominent Grass Valley, California miner and mill owner, who apparently had it assayed by Melville Atwood toward the end of June 1859. The assay results were reported to be about $3,876 per ton, 75 percent in silver and the rest in gold. Early the following day Judge Walsh, B.A. Harrison, J.F. Stone, and Joseph Woodworth were reported to have set out for the new discovery. This marked the beginning of the rush to Washoe. By the spring of 1860 almost all the original locators had sold out for a few thousand dollars what was soon to be worth millions and drifted into obscurity. Comstock was reported to have sold his one-sixth interest in the Ophir for approximately $11,000; Penrod sold his one-sixth interest for about $5,500; McLaughlin his one-sixth for around $3,000; and O'Riley held out the longest and received about $40,000 for his one-sixth of the Ophir. Since at that time no one could foresee the true long-range potential of the Comstock, the prices that most of the early locators received were not unfair. Many of the early locators parted with money freely and died penniless (Bonham & Papke, 1969, 102; Lincoln, 1923, 222; Lord, 1883, 34-49; Schilling, 1976, map; Smith 1943, 5-10, 17).

How the Lode Got Its Name

Why the name "Comstock" for the celebrated Lode? Why not Finney Lode or Virginia Lode or McLaughlin and O'Riley Lode after its discoverers? The name given to one of the world's richest mining lodes commemorates Henry Thompkins Paige Comstock (1820-1870). Comstock was born in Ontario, Canada of Connecticut descent. His father, Noah Comstock Sr., was engaged in the lumber and hotel business in Ontario, Ohio, and Michigan. Henry worked as a trapper for the American Fur Co. and first came to Nevada from New Mexico in the early 1850s, at which time he began prospecting in Gold Canyon. He was among the few hard-core prospectors who remained in the canyon during the winter. His nickname was "Old Pancake," because legend has it that he never took the time to bake bread but made pancakes instead. It is agreed that he did not discover the rich lode that bears his name, but that he was among the earliest locators on the Lode.

There are two theories concerning the naming of the Lode. The most commonly accepted theory is that Comstock bragged so much about his finds that the area became known as "The Comstock." De Quille states that "once Comstock got into the Ophir claim he elected himself superintendent, and was the man who did all the heavy talking. He made himself so conspicuous on every occasion that he soon came to be considered not only the discoverer but almost the father of the lode. As it was all Comstock for considerable distance around the Ophir mine, people began to speak of the vein as Comstock's mine, Comstock's lode, and the lead (ledge or lode) throughout its length came to be known as the Comstock Lode . . . while the names of O'Riley and McLaughlin, the real discoverers, are seldom heard, even in the city (Virginia City) that stands on the spot where they first opened to the light of the sun the glittering treasures of the vein."

Comstock Paper No. 2 reports that "in making out the deed whereby this (Comstock's) claim was conveyed to (Judge James) Walsh, it was, for want of a better name, described as the 'Comstock ground,' a style of description which, having been adhered to in all subsequent sales of the property or portion thereof, caused this term to be at length applied to all portions of the lode ... " This gave rise to the hypothesis that the Lode received its name from the way it was described in property conveyances.

Comstock sold out his interest in the Ophir Mine to Judge James Walsh for about $11,000 at an early date and soon spent the money realized from his Comstock claims. He is reported to have remained in Virginia City for five or six years, prospecting with little or no success in the adjacent countryside, before leaving for Montana. Controversy surrounds the manner of his death. The most commonly accepted theory is that he committed suicide in Bozeman, Montana. Eliot Lord substantiates this theory by citing a letter written by an eye-witness to the suicide. Comstock's family and his former partner, the highly-respected Emanuel Penrod, however, felt that he had been murdered for money he had obtained for being a witness for the Ophir Mining Co. in a Virginia City lawsuit a month or two before his death. Penrod believed that Comstock was too much of an eternal optimist to have committed suicide. In any event, the prospector for whom the Comstock Lode is named died penniless.

In late 1859 there was an unsuccessful move to rename the Lode the Paiute or Pi-Ute Lode. A December 31, 1859 article in the *Territorial Enterprise* relates that "the locality known as Virginia City formerly belonged to the Pi-Ute Indians, and there would seem to be a peculiar propriety in naming the so-called Comstock lead (lode) the Pi-Ute lead ... "

"It is the desire of the true discoverers, and of very many residents in the mines, that the above (name) should be adopted. Will the papers of California please notice" (Carlson, 1955, 59; Comstock Paper No. 2, M & SP, 1876, v. 33, July 29, 80; Comstock Paper No. 6, M & SP, 1876, v. 33, Sept. 30, 224; De Quille, 1947, 30; Lord, 1883, 411-12; Nevada Historical Society, 1911, 69-71; TE, 1859, Dec. 31, 2:2).

Virginia City, The Queen of the Comstock

The legendary queen city of the Comstock is located on Nevada State Route 341, 24 miles southeast of Reno. The historic town, which is laid out on the eastern slopes of Mt. Davidson at an elevation of 6,220 feet, was founded in 1859 after the discovery there earlier that year of the northern branch of the Comstock Lode. In the summer of 1859 it was determined that the troublesome "blue stuff" that was clogging the placer equipment was actually rich silver ore. Word of the discovery spread rapidly to California, and the "Rush to Washoe" began.

Virginia City, named for James Finney or Fennimore or "Old Virginny," soon replaced Johntown, near the mouth of Gold Canyon, as the largest mining camp in the area. Virginia City had several earlier names. It was originally called Pleasant Hill or Mount Pleasant Point. In late summer of 1858 it was called Ophir and later Ophir Diggings for the Ophir Mine, which was the site of the discovery of the Virginia City branch of the Comstock Lode. A month or two later it was called Virginia Town. The name Virginia City was used as early as October 8, 1859 in the *Territorial Enterprise*. Toward the end of 1858 there was an unsuccessful move to name it Wun-u-muc-a, Winnemuk, or Win-ne-mocker in honor of the Paiute chief, Winnemucca. In an article in the May 5, 1860 *Territorial Enterprise* it was actually referred to as Winnemuck City.

Virginia City's post office has operated since late 1858, and the town was incorporated in February 1861. The early 1860s on the Comstock were distinguished by the growth of the mines in Virginia City, Gold Hill, Silver City, and American Flat. For a while Gold Hill rivalled Virginia City in size and importance. By 1862 an estimated 3,000 persons were reported to be living in Virginia City. At that time the leading mines were the Ophir, Chollar, Potosi, and Gould & Curry. The town grew steadily throughout the decade in spite of a brief depression in the mid-1860s. The early wood structures gave way to stone and brick; sewer and gas lines were installed; and the city took on a metropolitan appearance. Construction of the Virginia & Truckee Railroad began in 1869. In 1873 a massive silver deposit was discovered in the Consolidated Virginia and California mines, owned by the firm of John W. Mackay, James G. Fair, James C. Flood, and William S. O'Brien. This discovery became known to the world as the "Big Bonanza," which lead to the golden era of the Comstock in the mid-1870s. Virginia City suffered a devastating fire in 1875, but recovered very rapidly from it because of the optimism fostered by the Comstock boom. In 1876 a new International Hotel rose out of the ashes of the one lost to the fire. The six-story,

160-room hotel was the most luxurious and famous hotel between the Palmer House in Chicago and the old Palace Hotel in San Francisco. Piper's Opera House was rebuilt with funds contributed by Tom Maguire and John Mackay. No fire could quell the spirits of the Comstock.

The Comstock's best year was 1876, when total production from the mines exceeded $36,000,000. After 1878 the decline began. In the mid-1870s Virginia City's population peaked at about 25,000. By 1890 it had declined to approximately 6,000, and in 1923 it was only 1,500. Although the great mining period ended in the late 1870s, low grade ore processing, tailing reduction, and open pit mining have continued intermittently to the present time.

Today Virginia City is a bustling tourist center and residential community with a population of approximately 700. It is one of the nation's most famous "ghost towns." Many reminders of the Comstock era remain, including Piper's Opera House; the Fourth Ward School; St. Mary's of the Mountain Church; the County Hospital; the Virginia & Gold Hill Water Co. Building; the Virginia & Truckee Railroad office, roundhouse, and freight depot; the Miners' Union Hall; the Savage, Mackay, and Cole mansions; and the Storey County Court House, to mention a few (Angel, 1881, 572; De Quille, 1947, 32; Harris, 1973, 55; Kelly, 1862, 107-08; Mordy & McCaughey, 1968, 181-83; Sanborn-Perris Map. Co., 1890, sh. 1; Sanborn Map Co., 1923, sh. 1; TE, 1859 Oct. 8, 3:1; 1859, Dec. 31, 2:2; 1860, May 5, 2:3).

A Tribute to "Old Virginny"

Virginia City's name commemorates an early Gold Canyon prospector by the name of James Finney, also known as James Fennimore or "Old Virginny" or "Old Virginia" in honor of his native state of Virginia. According to popular legend, Virginia City was named by "Old Virginny" one night in 1858 when, in a drunken stupor, he fell, breaking his whiskey bottle. Upon seeing its contents spilled, he is purported to have uttered, "I baptize thee Virginia Town." Consequently, Finney is better remembered for his fondness of the bottle than for his astuteness and tenacity as a prospector. Apparently he arrived in Gold Canyon from California in the mid-1850s and was one of the hard core prospectors who spent the winters there. *Comstock Paper No. 6* relates that "of all the original claim owners none fared so badly, in a pecuniary point of view, as 'Old Virginny,' a man who, in so far as there was any merit in being early on the ground, deserved to have profited from this circumstance above all others." In Finney's defense Grant Smith wrote, "When there was so much to his credit it seems a pity that he should be remembered only for his weaknesses. He was known as the best judge of placer ground in Gold Canon; he located the first quartz claim on the Comstock, the worthless Virginia croppings (the footwall of the Ophir), on February 22, 1858; he is credited with the discovery of the placers below the Ophir in 1857; and it was 'Old Virginny' who led the other three up the canon on January 28, 1859, to locate the placers on Little Gold Hill. However, honor came to him: the early miners at Virginia City acknowledged their debt by holding a meeting and naming the town after him, and the mountains above the town came to be known as the Virginia Range."

Apparently he received less for his Comstock mining interests than any other early locator. It is reported that Henry Comstock obtained a quit claim deed from Finney for his earlier claim to the Ophir in exchange for an old broken down Indian pony, some whiskey and tobacco, a roll of blankets, and a gold rocker. After his death from being thrown from a horse in 1861, the people of Mineral Rapids (near Dayton) gave him an appropriate funeral and passed a resolution to the effect that the inhabitants of Nevada Territory were indebted to Finney more than anyone for the discovery of the Comstock Lode and that even though he had his faults, he should be remembered as an honest, charitable, and generous man. Dan DeQuille wrote that even though Finney was fond of strong spirits, he was by no means lazy; his drinking sprees were usually followed by periods of activity. When not prospecting, he was very fond of hunting. De Quille reports that he did not die a pauper but had about $3,000 to his name (Bancroft, 1890, 99-100; Comstock Paper No. 6, M & SP, 1876, v. 33, Sept. 30, 224; De Quille, 1947, 52-53; Kelly, 1862, 104-05; Smith, 1943, 13-14).

Chapter 2

THE MINES AND MILLS OF SEVENMILE CANYON

Because of their large number, the mines and mills of the Virginia City area will be treated in several chapters - one chapter on the Sevenmile Canyon area; two chapters on Virginia City proper, one covering the mines and the other the mills; and another chapter on the mines and mills of the Sixmile Canyon area. The coverage of the Sevenmile Canyon area will treat first the mines and then the mills.

The Setting: Sevenmile Canyon

This important Comstock-era canyon is located north of Virginia City, east of Cedar Hill, and intersects the Sixmile Canyon about 1/2 mile west of Sugarloaf near the site of the Monte Cristo Mine. During the days of the Comstock, this canyon was lined with mines and mills. The Sierra Nevada, Utah, and Union mines were near its head, and the Gould & Curry, Omega, Mariposa, Lands, and Winfield mills were among the canyon's larger quartz mills. Concerning the canyon's name, a 1953 *Nevada State Journal* article reports that, "Seven Mile's name belies its length, unless you count the latter part of Six Mile (Canyon) as part of Seven Mile itself." If Sixmile is not included, Sevenmile is less than three miles in length. Today the canyon contains few reminders of its past except the large dumps of its mines and shafts (Lord, 1883, pl. 3; Moran, 1923, map; Nevada State Journal, 1953, July 12, 6:2).

The Mines of Sevenmile Canyon

Sutro Mine: Minor Comstock silver-gold claim staked in 1859 near the head of Sevenmile Canyon and adjacent to the Utah claim. The first ore discovered was quickly extracted, and operations were shut down from the mid-1860s to the early 1870s due to difficulties in collecting assessments and a general depression in Comstock mining activity. No activity was reported after 1877. Since Adolph Sutro did not settle on the Comstock until the early 1860s, the mine must have had an earlier name. For a short time in the early 1970s the mine was operated as a tourist mine (WPA, 1941, no. 49, 1; Gerald B. Hartley, Jr., 1982, personal commun.).

Utah Mine: This disappointing producer was located near the head of Sevenmile Canyon about one mile north of Virginia City. The 1,000-foot, patented claim was originally staked in 1859 along the northern extension of the Comstock Lode. A three-compartment shaft was begun in the early 1860s. Operations were suspended from the mid-1860s to the early 1870s. The mine reopened 1872 after the discovery of the Crown Point Bonanza in Gold hill and was operated fairly regularly until the mid-1880s. It was worked again in the early 1890s but closed shortly thereafter. Assessments of about $1,310,000 were levied; no dividends were paid; and there was no reported production. The mine is presumed to be named for the Utah Territory, of which until 1861 the Comstock was a part (Carlson, 1955, 66; Church, 1879, 1; Lewis, c. 1962; Smith, 1943, 292; TE, 1866, Sept. 7, 3:1; WPA, 1941, no. 52, 1-2).

Allen Mine: Small precious metal mine located south of the Utah Mine. The mine was first worked in the early 1860s, and in 1866 it was reported to have 925 feet on the Comstock Lode and to be inoperative (Lord, 1883, pl. 3; SMR, 1866, 81; TE, 1866, Sept. 8, 3:1).

Sierra Nevada Mine: Sevenmile Canyon's second largest producing mine is located on the south side of the canyon below the Utah Mine. This patented claim was first staked and worked in 1859, having about 3,600 feet on the north end of the Comstock Lode. From the late 1860s to the mid-1870s the mine's old upper workings were reworked at a profit. In 1878 the mine became the focus of one of the last big stock deals on the Comstock. Ore

assaying at around $300 per ton was found causing the stock, which was selling for approximately $2.90 per share in May 1878, to climb to about $200 per share at the beginning of November of the same year. After no profitable returns materialized, panic set in, and the stock fell to approximately $60 per share on November 21, 1878. The crash marked the end of the Comstock stock market bonanza days. The mine operated intermittently up to the early 1940s. Reported production for the period 1866-1933 was an estimated 197,000 tons, yielding approximately $1,818,000 for an average of slightly over $9 per ton. Dividends of about $102,500 were paid, with the last dividend being paid in 1871. According to Stuart, assessments of approximately $6,756,000 were made. Myron Angel stated that the mine's stock was a favorite for "milking the public both in sales of share and assessments." Carlson reports that most likely the mine took its name from the nearby Sierra Nevada mountain range, whose name in Spanish means "snowy saw-teeth" (Angel, 1881, 612; Becker, 1882, 13-14; Carlson, 1955, 64; Church, 1879, 1; Lewis, c. 1962; Smith, 1943, 292; Stuart, 1909, 42; WPA, 1941, no. 45, 1-10).

North Ophir Mine: Located east of and adjacent to the Sierra Nevada Mine. According to Helen Carlson, in 1863 the mine was reported to be an extension of the lucrative Ophir Mine and purportedly was yielding pure silver. It was selling for about $60 a foot when fraud was exposed with the discovery that the claim had been "salted" with half-dollar silver coins. Later approximately 270 feet of the claim became part of the Union Consolidated Mine, and about 600 feet were acquired by the Mexican Mining Co. to form the present Mexican claim (Carlson, 1974, 179; Lord, 1883, pl. 3; WPA, 1941, no. 33, 1; no. 51, 1).

Union Consolidated Mine: This patented silver-gold claim was originally staked in 1859 with about 302 feet along the northern extension of the Comstock Lode between the Sierra Nevada and Mexican mines. It is located due north of Virginia City's Masonic Cemetery and was Sevenmile Canyon's largest producer in terms of dollars. Later the claim's size was increased to include approximately 270 feet from the North Ophir for a total of about 575 feet. Some work was done in the early 1860s, but no further work was performed until the late 1860s when a three-compartment shaft was begun. In the late 1870s a new Cornish pump, the largest in the world costing an estimated $410,000, was installed to pump water from the lower levels. At that time the mine was controlled by the Bonanza Firm of John W. Mackay, James G. Fair, James C. Flood, and William S. O'Brien. The Union Shaft was jointly owned and operated by the Ophir, Mexican, Union Consolidated, and Sierra Nevada mines. Reported production for the years 1879-1918 was about $2,454,000 from approximately 86,000 tons for an average of about $28.50 per ton. Stuart reported that assessments of about $2,660,000 had been levied and no dividends were paid. According to Helen Carlson, the mine's name was either a transfer from another western state or the result of the heightened patriotism before and during the Civil War (Angel, 1881, illus. opposite p. 60; Becker, 1882, 8, 14; Carlson, 1955, 66; Church, 1879, 1; Lewis, c. 1962; Stoddard, 1950, 23; Stuart, 1909, 42; WPA, 1941, no. 51, 1-12).

Scorpion Mine: Minor Sevenmile Canyon mine located above the north side of the canyon near the old Catholic Cemetery. Even though the claim was staked in 1859, the mine's main period of activity was from the early 1870s to the early 1880s. Some activity was reported from 1889-1893 and in the mid-1920s (Lord, 1883, pl. 3; WPA, 1941, no. 43, 1).

The Monte Cristo and Keyes mines are located near the mouth of the canyon on the northern extension of the Brunswick Lode and will be covered in Chapter 6 on the Brunswick District.

The Mills of Sevenmile Canyon

The canyon's major mills will be covered in the order of their locations from the top of the canyon to its mouth. The Gould & Curry and Omega mills, both of which were located at the intersection of Sevenmile and Sixmile canyons, have been included with the Sevenmile Canyon mills.

Mariposa Mill: Quartz mill located at the head of Sevenmile Canyon south of the Sierra Nevada Mine. In Kelly's 1862 directory it was reported to have cost $20,000, to have 12 stamps, and a capacity to crush 15 tons of ore per day. In 1867 the *Territorial Enterprise* reported it to be owned by the Bank of California, which was controlled by William Sharon, and to be called the California Mill. In the 1871-72 *State Mineralogist's Report* it was listed under its old name of Mariposa Mill and was reported to be processing 30 tons a day of ore from the Hale & Norcross Mine. In 1873 it was reported to be controlled by the Bonanza Kings, John W. Mackay and James G. Fair (De Quille, 1947, 394; Kelly, 1862, 111; Lord, 1883, pl. 3; Smith, 1943, 152; SMR, 1871-72, 138; TE, 1867, Dec. 20, 3:1).

Evans Mill: Small reduction facility which was located near the Sierra Nevada Mine. In 1870 the *Territorial Enterprise* listed it as the Berry & Evans Mill and reported that it was working ore from the Cosmopolitan Mine. An 1871 *Territorial Enterprise* article listed it as the Evans & Berry Mill and reported that it was running at full capacity on ore from the Sacramento & Meredith Mine. The 1871-72 *State Mineralogist's Report* listed it to be a five-stamp mill with a 13-ton-a-day capacity, which was processing ore from the Savage Mine (Lord, 1883, pl. 3; SMR, 1871-72, 138; TE, 1870, June 30, 3:2; 1871, Apr. 29, 3:2).

Sierra Nevada Mill: Sizeable quartz mill belonging to and located next to the Sierra Nevada Mine. It was reported in the early 1870s to have 20 stamps and a capacity of 50 tons a day (SMR, 1871-72, 138; TE, 1869, Mar. 6, 3:2).

Lands Mill: Reduction establishment located between the Evans and Bassett mills in Sevenmile Canyon. In the 1866 *State Mineralogist's Report* it was reported to be a steam mill using 5-1/2 cords of wood a day, having 20 stamps and 10 Wheeler pans, and crushing 30 tons of rock in 24 hours. A 1954 *Nevada State Journal* article reported that in 1868 it and the Nevada Mill were foremost among Comstock milling companies. In the early 1870s it was listed as a 20-stamp mill running on ore from the Chollar-Potosi Mine. In 1875 it was owned by the Union Mill & Mining Co., which was controlled by William Sharon (Angel, 1881, 594; Lord, 1883, pl. 3; Nevada State Journal, 1954, Nov. 14, 6:2; SMR, 1866, 148; SMR, 1871-72, 138).

Bassett Mill: Early quartz mill located about midway down Sevenmile Canyon between Lands and Winfield mills. It was built in 1861, owned by A. Bassett & Co., and was also known as the Suncook Mill. Kelly's 1863 directory described it as having a 30-horsepower engine, 12 stamps and 15 tubs, 8 employees, and a capacity of 18 tons a day. In 1865 the *Gold Hill News* reported it to have 16 stamps and blacksmith and carpenter shops, and to be running on ore from the Savage Mine. Another Bassett or Suncook Mill was located in Sixmile Canyon (GHN, 1865, Feb. 25, 3:1; Kelly, 1863, 161-62; Parkinson, 1874, map; SCR, Locations, 1870, v.A, 455).

Booths Mill: Shown on an 1862 map as located about midway down Sevenmile Canyon. The only other information found was a brief mention of this mill in an 1866 *Territorial Enterprise* article (Bancroft, 1862, map; TE, 1866, Sept. 7, 3:1).

Winfield Mill: Large mill erected in the early 1860s approximately one mile above the mouth of Sevenmile Canyon. In Kelly's 1862 directory it was reported to have 20 stamps, of which only eight were in use, and a capacity of 20 tons per day. Kelly's 1863 directory described it as having a 45-horsepower engine; 8 stamps, 45 pans, and 10 wooden tubs; 12 employees; and a 20-ton-a-day capacity. In the 1866 *State Mineralogist's Report* it is listed as a steam mill using 5 cords of wood a day and having 18 stamps, 8 Hepburn pans, and a capacity of 30 tons a day. In the early 1870s it had 20 stamps, could crush 50 tons per day, and was running on ore from the Chollar-Potosi Mine. In 1875 it was owned by the Union Mill & Mining Co., which was controlled by William Sharon (Angel, 1881, 594; Kelly, 1862, 113; 1863, 161; Lord, 1883, pl. 3; SMR, 1866, 148; 1871-72, 138).

Gould & Curry Mill: Massive reduction operation built in the early 1860s by the Gould & Curry Mining Co. at the junction of Sixmile and Sevenmile canyons. Eliot Lord describes the mill as follows:

> The extraordinary mill of the Gould & Curry Company was, however, the most conspicuous monument of inexperience and extravagance ever erected in the mining district. A rocky point two miles east of Virginia City, at the junction of Six and Seven-Mile canons, was transformed into an artificial plateau, on which was erected a building in the form of the Greek cross, 250 feet long, with arms 75 feet in length and 50 feet in width. The lower story and foundations were constructed of massive stone blocks supporting a heavy frame superstructure of finished wood, adorned with broad verandas, and painted inside and out. Smooth approaches were cut out and blasted over the hill-sides, arched sewers were built of hewn stone, and graded terraces, ascended by flights of broad stone steps, surrounded the mill. On the summit of the hill above the plateau a large reservoir was excavated in the solid rock and supplied with water from Virginia City, from which iron pipes conducted the water to hydrants disposed at regular intervals over the mill terraces. A stranger, at the sight of the stately edifice rising in the centre of a group of offices, shops, stables, and laborers' cottages, would naturally have supposed it the mansion of some wealthy land-owner rather than a mill built in a barren district to crush silver ore, nor, on approaching nearer, would he have been undeceived by the presence of an oval basin of clear water, 50 feet long and 30 feet wide, in whose centre three water-nymphs supported a rock shell whereon floated a white swan that with upturned head spouted a jet of water high in air. The twin calves dragging a light cart over the lawn, the cackle of poultry, the grunting of swine, and the lowing of cattle would have heightened the illusion. Only the impertinent clatter of the stamps jarred upon the sense as unsuited to these surroundings, although every pain was taken to make the necessary work of milling as inoffensive as possible, and the disagreeable powder from the stamps was quickly fanned to a tightly-closed dust-room. It was found expedient to make an addition to the first mill 62-1/2 feet in length; but the only objection urged against the new structure was its injury to the symmetry of the original design ... "

By the end of 1863 approximately $900,000 had been spent on the mill. In 1864 Charles Bonner, the mill's new superintendent, found processing by the Veatch method to be too inefficient and had the mill almost completely reconstructed at a cost of over $560,000. In the 1866 *State Mineralogist's Report* the mill was reported to have 80 stamps, 39 Hepburn pans, 3 Varney pans, and a capacity of 100 tons a day. In 1871 it was sold to Parke & Bowie and shut down shortly thereafter. An 1873 article in the *Territorial Enterprise* describes the remains of the once-stately mill as follows:

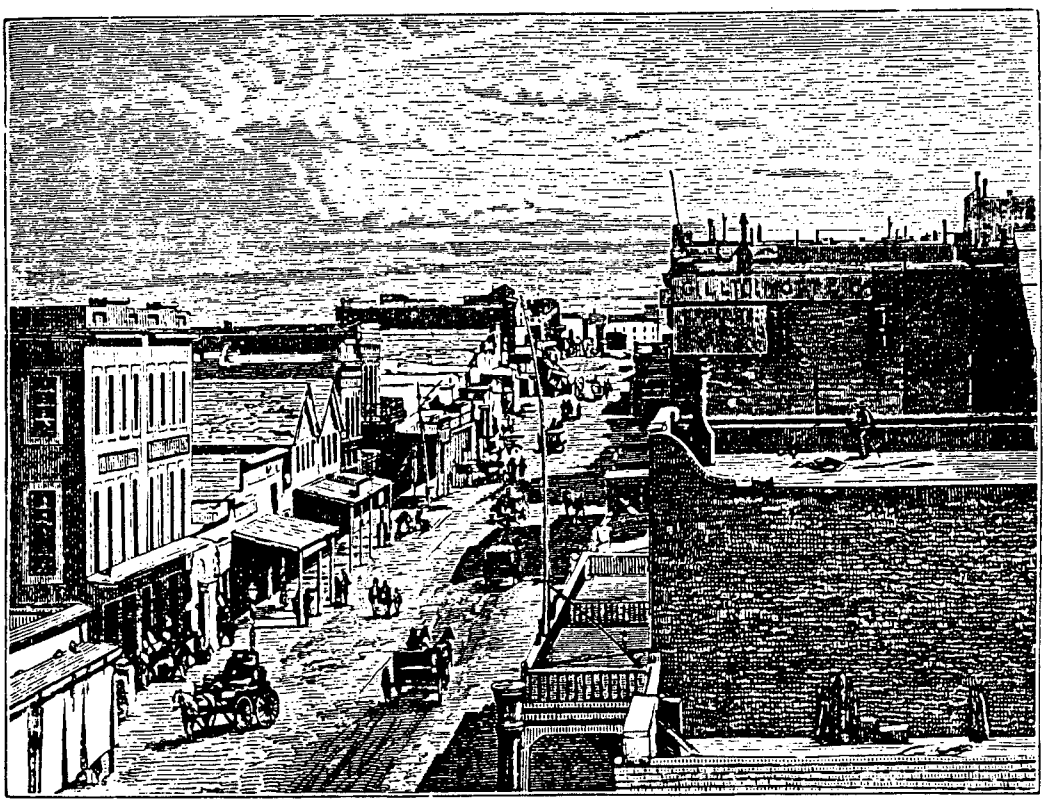
> The old mill building is gone, and even the cut stone foundations on which it once stood have been torn down and removed. The old ore house has also disappeared, and but a heap of rubbish marks the spot where it once stood. The large machine shop . . . still stands, but seems now to be used as a barn or cow-house. The large stone building formerly used as a store house, has been

metamorphosed into a splendid dwelling, and, we believe, is now occupied by Mr. Bowie, of the firm of Parke and Bowie ... The old boarding-house, on the north side of the canyon, where the hundreds of employees of the once rich and flourishing Gould & Curry Co. were wont to get their daily grub, has been torn down and removed. The heavy walls of cut stone, which in former times supported the fancy terraces at the west end of the mill, have been torn down and the stone hauled away ... Even the 'duck pond,' as was called the large and handsome oval fountain ... has not escaped the despoiler. The basin is now dry, and perched aloft on the pipe ... now stands the iron image of a swan with head turned appealingly to heaven ... and the paint is gone from his head and back -- worn away probably by curses of stockholders ... This is about all that is now to be seen on the spot where but a dozen years since was expended over $1,000,000.

The Omega Mill was built on the same site in 1876. By the late 1870s only the massive foundations of the Gould & Curry Mill remained. The mill was named for the Gould & Curry Co., which was named for the original locators of the Gould & Curry Mine, Alvah Gould and Abraham V.Z. Curry (Comstock Paper No. 17, M & SP, 1877, v. 34, Feb. 24, 120; Lord, 1883, 124-25, pl. 3; SMR, 1866, 148; TE, 1871, July 18, 3:2; 1873, May 17, 3:1).

Omega Mill: Tailings mill built in 1876 by the Bonanza Firm-controlled Pacific Mill & Mining Co. at the mouth of Sevenmile Canyon on the site of the old Gould & Curry Mill. It was reported to have 20 pans and a 100-ton-a-day capacity; it operated for about five years on tailings from the Consolidated Virginia and California mines. Rubble foundations remain at the site (Comp, 1980; Lord, 1883, pl. 3; TE, 1876, Aug. 22, 3:3).

Atlantic Mill: Listed in the 1871-72 *State Mineralogist's Report* as located in Sevenmile Canyon, having 12 stamps and a capacity of 30 tons a day, and being idle. No information on its exact location could be found (SMR, 1871-72, 138).



STREET SCENE IN VIRGINIA CITY, NEVADA.

Street scene in Virginia City (Williams, *The Pacific Tourist*, 1879, p. 209).

Chapter 3

THE MINES OF VIRGINIA CITY

Virginia City's mines from Cedar Hill south to the "Divide" are treated in this chapter.

Irving Mine: Minor Comstock claim which was staked in 1860 on the north side of Cedar Hill Canyon. Work on the property ceased in the late 1860s (WPA, 1941, no. 24, 1).

Daley Mine: This claim, which was staked in 1859, was situated at the north end of the Comstock Lode on Cedar Hill; its production was negligible. Operations ceased in the mid-1860s (WPA, 1941, no. 15, 1).

Cedar Hill Mine: Was located on the south side of Cedar Hill about 200 feet from the base of Cedar Ravine. This was one of the few hydraulic mines on the Comstock; it reported sizeable gold production in the early 1860s. It appears to have been abandoned soon after due to lack of adequate water and commercial ore (Comp, 1980).

Sacramento & Meredith Mine: This mining property was located north of Cedar Ravine on Cedar Hill. The claim was staked in 1859, but there was no production until 1867; operations were suspended a year later. Through 1881 the mine had yielded approximately $220,000 from about 27,000 tons for an average of about $8 per ton. Assessments amounted to an estimated $200,000, and no dividends were paid. In the mid-1880s the property was unsuccessfully explored by the Sierra Nevada Co. (Smith, 1943, 292; WPA, 1941, no. 41, 1).

Mexican Mine: The original claim was staked in 1859 with approximately 100 feet along the Virginia City Branch of the Comstock Lode. In the mid-1860s the original claim was combined with the Ophir claim. The present Mexican claim, a patented claim with about 600 feet on the Lode, was acquired from the North Ophir Co. in the late 1860s. Little exploration or development was done on the property until the mid-1870s. In 1877 the Bonanza Firm of John W. Mackay, James G. Fair, James C. Flood, and William S. O'Brien gained control of the mine and carried on extensive and fruitless exploration until the mid-1880s. According to Stuart, assessments totalled an estimated $2,861,000, and no dividends were paid. Total recorded production for the years 1867-1918 was approximately $1,286,000 from an estimated 54,000 tons for an average yield of almost $24 per ton.

Most accounts agree that the mine was named for Gabriel Maldonado (Maldarnardo, Meldonado), a Mexican miner of Spanish descent, who purchased the property from Emanuel Penrod in 1860. Helen Carlson theorizes that it might have been known by the name even before its purchase by Maldonado, because Mexican miners employing Mexican mining methods were active in the area at an early date. Maldonado and his brother were reported to have operated the mine, to have sold out in 1861, and to have returned to Mexico. In the early days the mine was often referred to as the Spanish Mine, because at that time the terms Mexican and Spanish were used interchangeably on the Comstock (Becker, 1882, 14; Carlson, 1955, 45; Comstock Paper No. 12, M & SP, 1876, v. 33, Dec. 16, 404; Lewis, c. 1962; Lord, 1883, 61, pl. 3; Smith, 1943, 209; Stuart, 1909, 42; WPA, 1941, no. 33, 1-6).

Burning Moscow Mine: Was located adjacent to the Ophir Mine. This silver-gold claim was staked either in 1859 or 1860, absorbed the Madison and LaCrosse mines and the Geller Ledge & Harrison Co. claim in 1863, and was purchased by the Ophir Mine in the mid-1860s.

Helen Carlson puts forth two theories concerning its name. One is that its original name might have been Burning Mosca. In Spanish "mosca" means "fly," so Burning Mosca could represent a distorted version of firefly. The other theory is that the name could commemorate Napoleon's march into Russia in 1812, which remained a vivid memory for some at the time of the Comstock discovery (Carlson, 1955, 22-24).

Santa Rita Mine: This claim was staked in the early 1860s in the vicinity of Ophir Hill. The Santa Rita Tunnel was used as a water source for Virginia City in the early 1860s. Its flow was cut off by an extension of the Cole Silver Mining Co. tunnel in 1863, after which the Cole Tunnel supplied the city with water until the late 1860s (Kelly, 1863, 155; Lord, 1883, pl. 3; Shamberger, 1969, 3).

Joe Scates Mine: Claim which was located in the early 1860s with approximately 4,500 feet along the lode to the east of the main Comstock Lode. Eliot Lord's map shows the mine situated directly southwest of the Virginia City cemeteries. Later, after division into smaller claims, the mine had only about 540 feet along the ledge. Little commercial ore was found, and work on the claim was suspended in the late 1870s. It appears that the mine was named for Joseph Scates, who was listed as a trustee of Virginia City in an 1863 directory (Kelly, 1863, 166; Lord, 1883, pl. 3; WPA, 1941, no. 25, 1).

Ophir Mine: Having been mined since early 1859, this is one of the oldest claims on the Comstock. It is located at the north end of Virginia City between the Mexican and California mines, is a patented claim, and has approximately 600 feet on the Comstock Lode. The site of the Ophir claim is linked with the original discovery of the Virginia City Branch of the Comstock Lode. Patrick McLaughlin and Peter O'Riley are generally given credit for discovering the Ophir in May or June 1859. James Finney (Old Virginny) and some companions had worked the same ground in the summer of 1858 but had failed to make a strike. Helen Carlson writes that John Jessup was reported to have been the first locator of the Ophir claim and was purportedly making $4 to $5 a day on the claim when he was killed by William Sides in a dispute over a game of cards in May 1859. Apparently O'Riley and McLaughlin jumped the dead man's claim and ended up receiving credit for the discovery. It is interesting to note that in 1864 the Ophir Mining Co. awarded approximately $30,000 to John Jessup's mother for the dead man's claim.

The original locators of the Ophir were O'Riley, McLaughlin, Henry Comstock, Emanuel Penrod, and John "Kentuck" Osborne. The camp that grew up around the new discovery was known as Mount Pleasant, Pleasant Hill, Ophir, Ophir Diggings, Washoe Diggings, and, eventually, Virginia City.

The Ophir claim is composed of the original Burning Moscow, Mexican, North Ophir, and South Ophir claims. The Ophir had the distinction of being the first mine in the world to use square-set timbering, which Philipp Deidesheimer invented for the Ophir in 1860. Without square-set timbering, the successful underground exploration and mining of the Comstock would have been impossible. The first Ophir bonanza, discovered in 1859, produced over $5,250,000. At that time the Ophir Co. built its large quartz mill in Washoe Valley to process its bonanza ores. In the mid-1870s two substantial ore bodies were found at lower levels, yielding over $5,000,000. From 1900-1920 the Ophir yielded an estimated $4,000,000. Total recorded production from 1874-1925 was approximately 439,000 tons, yielding about $18,000,000 for an average of about $41 per ton. Dividends of about $1,596,000 were paid; the last dividend was declared in 1880. According to Stuart, assessments totalled an estimated $4,653,000.

Some famous names are associated with the Ophir. James G. Fair was superintendent of the mine in 1866 for about nine months. William Sharon bought about 20,000 shares of Ophir stock for approximately $2,700,000 in the mid-1870s. Grant Smith states that in all its history, the Ophir did not make a single millionaire and that underground flooding was the curse of the mine for many years.

The name Ophir ultimately refers to a biblical region famous for its gold (Angel, 1881, 72-73; Becker, 1882, 15; Carlson, 1955, 46-56; Church, 1879, 1; Smith, 1943, 292; Stoddard, 1950, 24; Stuart, 1909, 42; WPA, 1941, no. 38, 1-19).

Central Mines: The Central No. 1 and Central No. 2 claims were staked on the Virginia City portion of the Comstock Lode in 1859. John Bishop, one of the early locators on the Comstock, staked the Central No. 1 claim. According to Carlson, the Central No. 1 claim was named "central" because of its strategic or central location between the California and Ophir Mines, which at that time were considered to be the richest on the Comstock. These claims later became part of the California Mine (Carlson, 1955, 27; Comstock Paper No. 13, M & SP, 1876, v. 33, Dec. 23, 420).

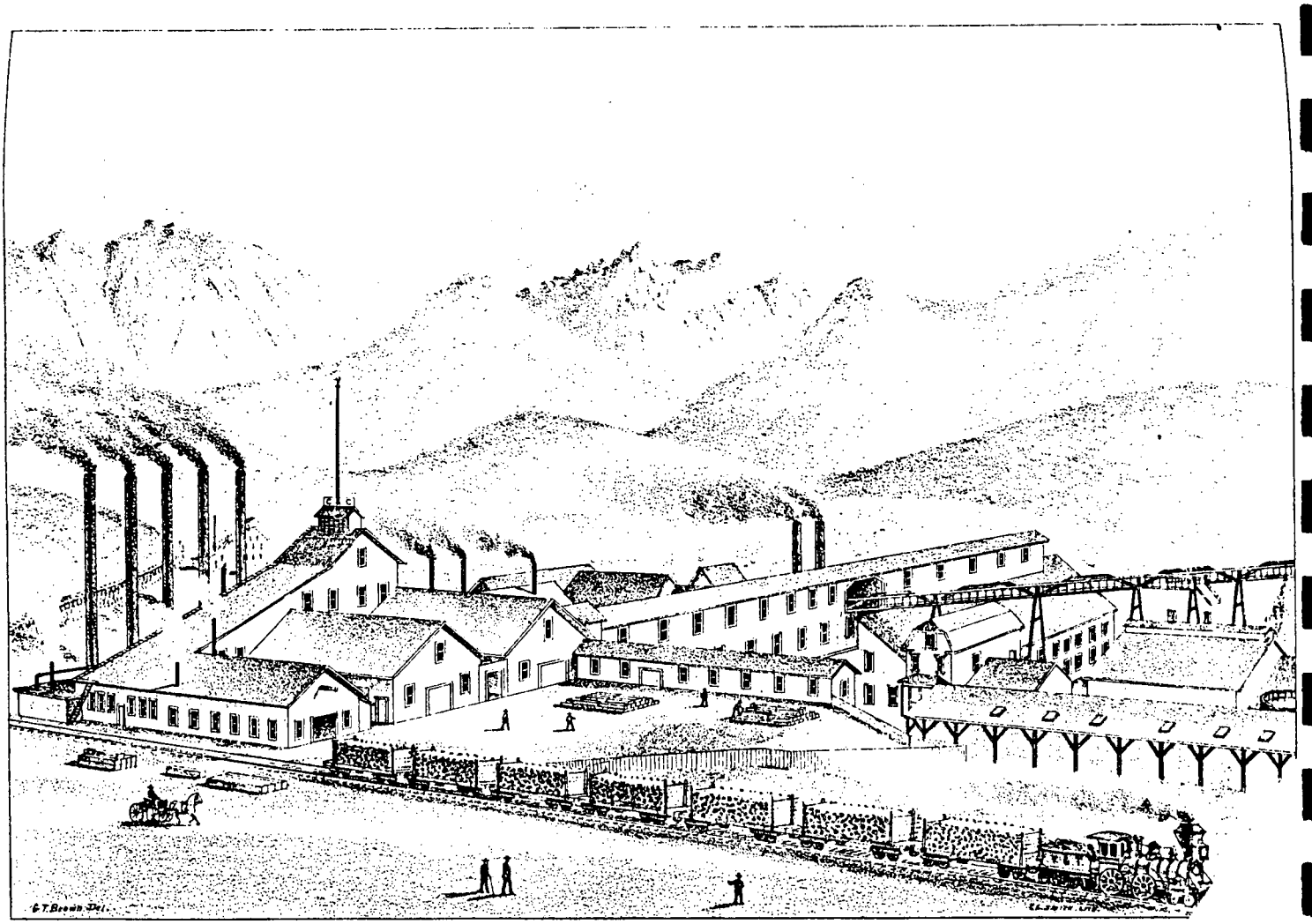
Kinney Mine: "This fifty-foot claim on the Comstock, along with the old California, the Central No. 1 and the Central No. 2, is part of the present California. The name honors George W. Kinney who purchased the ground on September 16, 1859, from Joseph Webb for $200, left the area in 1865, and sold his interest in 1872. He brought suit against the Consolidated Virginia in 1874, but the suit was rejected ... " (Carlson, 1955, 43).

California Mine: This world-famous silver-gold mine was the second largest producer on the Comstock. An adjacent Virginia City mine, the Consolidated Virginia, was the biggest producer on the Lode. Both the California and Con Virginia were controlled by the Bonanza Firm of John Mackay, James Fair, James Flood, and William O'Brien. The present California claim includes about 600 feet in the Comstock Lode and is composed of the Central No. 1 and Central No. 2 claims, the original California claim, and the Kinney claim. In early 1874 the California Mining Co. was founded to work the portion of the "Big Bonanza" ores on the California property (the bonanza extended through both the Con Virginia and California mines). Between 1876-1881 total production for the California Mine's portion of the "Big Bonanza" was an estimated $44,031,000 from about 588,000 tons for an average yield of almost $75 per ton. Dividends of about $31,320,000 were paid, with the last dividend being paid in 1879. In 1884 the California and Con Virginia mining companies merged to form the Consolidated California and Virginia Mining Co.; subsequent production was reported under the Con Virginia Mine. The California claim is a patented claim.

According to Helen Carlson, the claim was named by miners from Placerville, California to honor their home state (Angel, 1881, 612; Becker, 1882, 15; Carlson, 1955, 9; Church, 1879, 1; Lewis, c. 1962; Smith, 1943; 292; WPA, 1941, no. 10, 1-8).

C & C Shaft: This largest and most modern of all Comstock era shafts was located on the grounds of the California Mine in Virginia City. It was the joint property of the Consolidated Virginia and California mining companies; hence its name. It was used for exploration and to extract the fabulously rich "Big Bonanza" ores of both mines. The shaft was started in the mid-1870s and was part of a "third line" of vertical shafts sunk in an attempt to tap the Comstock Lode at depths of 3,000 feet beneath the surface. Other shafts in the "third line" included the Combination, Osbiston, Ward, East Yellow Jacket, Overman, Alta, and Justice. By the early 1880s the C & C had reached a depth of almost 2,450 feet below the surface (Angel, 1881, illus. opposite p. 52; Becker, 1882, 5; Stoddard, 1950, 17-20; WPA, 1941, no. 10, 3-7).

White & Murphy Mine: This 210-foot claim, named for Alexander White and John Murphy, later became part of the Consolidated Virginia Mine. Both men sold their interests in the mine at an early date for just a few thousand dollars. Murphy also owned an interest in the Crown Point Mine and some other locations in Gold Hill, but disposed of them all for a small amount of money. He is reported to have left the Comstock for the Twin Peaks Mining District near Austin, Nevada. From there he apparently went to White Pine County, Nevada where he was reported to have had minimal success in prospecting. He was described as shrewd, socially inclined, big-hearted, a free spender, and one who trusted in luck. Less is known about Alexander White, who apparently died soon after the discovery of the Comstock (Carlson, 1955, 67; Comstock Paper No. 11, M & SP, 1876, v. 33, Dec. 9, 384).



"C & C" SHAFT."
JOINT SHAFT OF THE "CON. VIRGINIA" & "CALIFORNIA" MINING COMPANIES, VIRGINIA, NEVADA

C & C Shaft (Angel, opposite p. 52).

Sides Mine: This almost 500-foot claim, located between the White & Murphy on the north and the Best & Belcher on the south, is now part of the Consolidated Virginia claim. The claim, also called the Sides & Co. and Dick Sides, was named for Richard D. Sides, the original locator. Sides lived in western Utah Territory prior to the discovery of the Comstock. As early as the mid-1850s he was elected treasurer of Carson County, Utah Territory and purchased a ranch in Jacks Valley near Genoa (Carlson, 1955, 64; Comstock Paper No. 13, M & SP, 1876, v. 33, Dec. 23, 420).

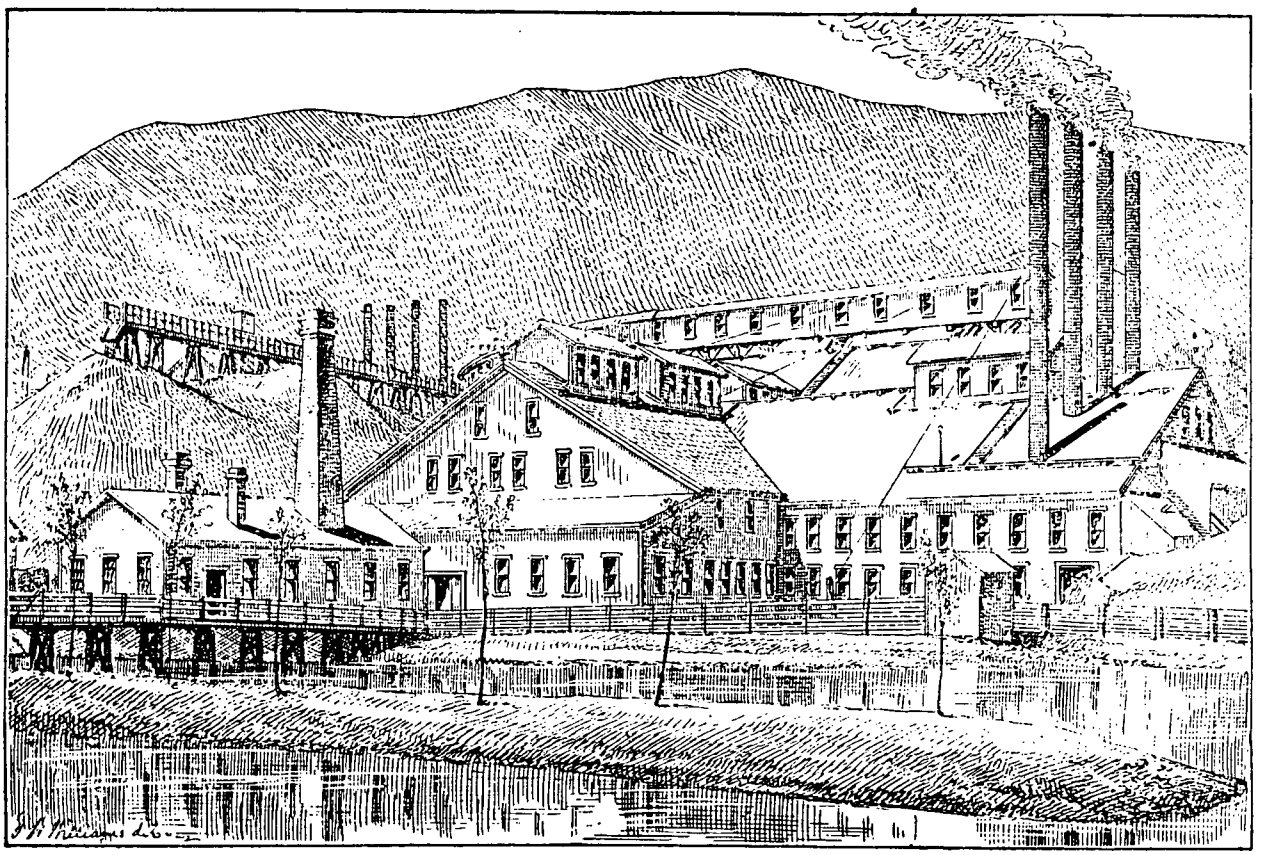
Consolidated Virginia Mine: The largest precious metal producer on the Comstock is located between the California and Best & Belcher mines in Virginia City. The 710-foot patented claim is composed of about 210 feet of the White & Murphy claim and 500 feet of the Sides claim. In the early 1870s the Consolidated Virginia stock was quietly bought up by what was to become known as the Bonanza Firm of John Mackay, James Fair, James Flood, and William O'Brien for about $50,000. A major ore body, which turned out to be the legendary "Big Bonanza," was found in early 1873. Soon the Con Virginia and the adjacent California mine, both controlled by the Bonanza Firm, gained international fame for the fabulously rich ore body that they shared. In the mid-1870s the two mines started to sink the C & C Shaft. The Con Virginia alone produced approximately 809,000 tons, yielding about $61,125,000 for an average of slightly over $75.50 per ton and paid dividends of about $42,930,000; the last dividend was paid in 1880. The Con Virginia and California bonanza produced almost $105,000,000 and paid dividends of about $80,000,000. The "Big Bonanza" and, consequently, the Comstock were at their height in 1876-77. By 1878 the known ore bodies in the two mines were becoming depleted. Production began to decline after 1877, and in 1883 the Con Virginia reported no production, contrasted to a production of approximately $16,657,000 in 1876. This legendary ore vein was the biggest and last bonanza discovered on the Comstock, and its exhaustion marked the end of the Comstock's golden era. In the mid-1880s the Con Virginia Mining Co. consolidated with the California Mining Co. to become the Con California & Virginia Mining Co. Work on the property continued into the 1940s. Reported production between 1873-1934 was about $82,663,000 from about 1,819,000 for an average of almost $45.50 per ton. In the early and mid-1980s the property was explored by the United Mining Corp. through its New Savage Mine.

According to Helen Carlson, the mine was named for the Virginia Mining District, which took its name from Virginia City (Angel, 1881, 612; Becker, 1882, 15; Carlson, 1955, 31; Church, 1879, 1; Lewis, c. 1962; Lincoln, 1923, 224-26; Smith, 1943, 292; Stoddard, 1950, 24-33; Stuart, 1909, 42; WPA, 1941, no. 13, 1-21).

West Consolidated Virginia Mine: This claim, staked in 1859, consisted of a strip along the west boundary of the California, Ophir, and Consolidated Virginia mines. No major work was performed until the mid-1870s when a shaft was started. The operation was plagued by flooding problems. Work was suspended in the mid-1890s. Some activity was reported from 1909-10. The name appears to be descriptive of the mine's geographic location west of the Consolidated Virginia Mine (WPA, 1941, no. 55, 1).

Andes Mine: Minor Comstock producer located west of and adjacent to the Consolidated Virginia Mine. The claim was staked in 1859, and many shallow tunnels were driven in the early 1860s. Operations were shut down from the mid-1860s to the mid-1870s. The mine's main productive period was from 1875-1878. Reported production for the period 1875-1917 was approximately $72,000 from about 7,000 tons for an average of a little over $10 per ton. Through 1881 assessments of about $500,000 were levied (Smith, 1943, 292; TE, 1876, Aug. 12, 3:3; WPA, 1941, no. 3, 1-3).

Best & Belcher Mine: This precious metal claim was originally staked in 1859 having about 224 feet along the Comstock between the Consolidated Virginia and Gould & Curry mines.



CONSOLIDATED VIRGINIA MINE.

Consolidated Virginia Mine (De Quille, frontispiece).

The claim was later expanded to a total of approximately 537 feet. The mine operated in the early 1860s but was shut down from 1865-1872 because of problems in assessment collection and a general depression in mining in the area. The property never paid any dividends; its production was negligible; and it levied assessments of about $2,631,000. In the early and mid-1980s the claim was being explored by the United Mining Corp. through its New Savage Mine.

The name commemorates a Mr. Best and E. Belcher, who purchased the claim from Henry Comstock and disposed of it soon after. Little is known about Best, who appears to have left the Comstock at an early date. The reader is referred to the description of the Belcher Mine in Chapter 7 for information on E. Belcher (Angel, 1881, 613; Becker, 1882, 15; Carlson, 1955, 19; Comstock Paper No. 13, M & SP, 1876, v. 33, Dec. 23, 420; Stuart, 1909, 42; WPA, 1941, no. 7, 1-4).

Gould & Curry Mine: This well known claim was located in 1859 with about 921 feet on the Comstock Lode between the Best & Belcher and Savage mines; later its size was reduced to about 608 feet. The mine was a large producer of silver and gold in the early 1860s, and in 1863 the Gould & Curry Co. constructed its elaborate mill at the intersection of Sevenmile and Sixmile Canyons, which was covered in Chapter 2.

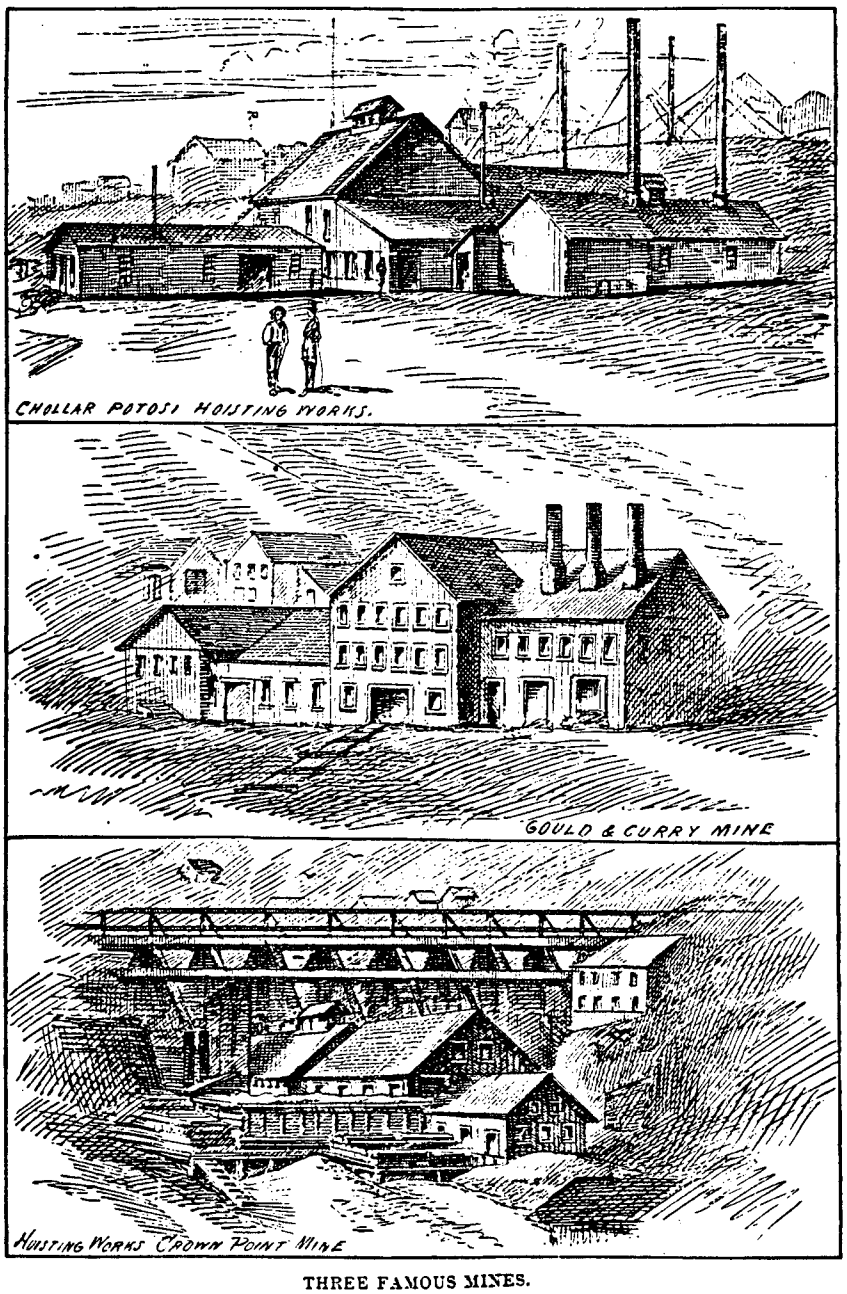
Beginning in the mid-1860s the mine was explored at lower levels by means of the Bonner Shaft. The four-compartment shaft was located on D Street in Virginia City. Following the discovery of the Big Bonanza in the nearby Consolidated Virginia and California mines in 1873, the shaft was enlarged to facilitate lower level exploration of the Gould & Curry and Best & Belcher mines. The shaft's name honors Charles S. Bonner, well known Comstock mine superintendent.

Between 1860-1881 reported production was about 314,000 tons, yielding approximately $15,664,000, for an average of almost $50 per ton. Dividends of about $3,826,000 were paid, with the last dividend being declared in 1866. According to Stuart, assessments were an estimated $4,662,000. In the early and mid-1980s the property was being explored by the United Mining Corp. through its New Savage Mine. The Gould & Curry Claim is a patented claim.

Some famous names are associated with the mine. When the Gould & Curry Silver Mining Co. was incorporated in 1860, George Hearst was an incorporator and trustee, and William C. Ralston was treasurer.

The mine's name honors the original locators, Alvah (Alva) Gould and Abraham V.Z. Curry. Both men sold their interests in the mine at an early date, possibly as early as the fall of 1859. Curry is reported to have received $5,000-6,000 for his portion, but Gould received less. Curry (1815-1873) is best known for being one of the founders of Carson City, where he spent an immense amount of time and energy building that community. In fact, he is considered to be the father of Carson City. Less is known about Gould who went to Reese River, Nevada c. 1862 and engaged in lumbering there and in other central and eastern Nevada mining camps before settling in California. He is reported to have been seen running a peanut stand in Reno about 20 years after selling his interests in the Gould & Curry (Becker, 1882, 16; Carlson, 1955, 38; Church, 1879, 1; Comstock Paper No. 13, M & SP, 1876, v. 33, Dec. 23, 420; Lewis, c. 1962; Smith, 1943, 238, 292; Stuart, 1909, 42; WPA, 1941, no. 7, 1-4; no. 21, 1-6).

Osbiston Shaft: Mining shaft which was located in southeast Virginia City near the Gould & Curry Mine. It was started in the mid-1870s and was part of a "third line" of vertical shafts sunk in an attempt to tap the Comstock Lode at about 3,000 feet beneath the surface. The Osbiston was jointly owned by the Gould & Curry and Best & Belcher mines and was used to explore those properties at great depths. In the early 1880s the shaft reached a depth of about 2,500 feet beneath the surface; it was abandoned in the mid-1880s.



THREE FAMOUS MINES.

Gould and Curry Mine (De Quille, center p. 166).

The name honors Frank F. Osbiston (1834?-1902), who was secretary and assistant superintendent of the Yellow Jacket Mine, an agent for the Bank of California under William Ralston, superintendent of the Savage Mine under John Mackay and James Fair, and superintendent of the Gould & Curry and Baltimore mines. He died in Australia.

For years the site of the shaft has been used for the Virginia City dump (Becker, 1881, 8; Doten, 1973, 2131; Smith, 1943, 239; Stoddard, 1950, 17-20; WPA, 1941, no. 21, 3-4; Gerald B. Hartley, Jr., 1982, personal commun.).

Savage Mine: This was the Comstock's major producing mine during the late 1860s. It is located in southeast Virginia City about 2/10 mile northeast of the Fourth Ward School. The claim, which lies between the Gould & Curry and Hale & Norcross, was staked in 1859 with approximately 1800 feet along the Comstock Lode; it was later reduced to about 800 feet. Exploration of the property began in the early 1860s in an effort to find an extension of the Gould & Curry ore body. Rich ore was eventually found, and in 1867 the mine had an average daily production of approximately 50 tons, yielding about $50 per ton. In 1869 it was producing 50-80 tons per day of ore yielding $35-$70 per ton. James G. Fair was superintendent of the mine in the early 1870s but soon resigned after failing to find a new bonanza. John P. Jones, later to become United States Senator from Nevada, and Alvinza Hayward gained control of the mine in 1871. In the mid-1870s the Savage, Chollar-Potosi, and Hale & Norcross mines joined efforts to sink the Combination Shaft. In 1878 history was made when the Savage was the first mine to be connected with the Sutro Tunnel. The mine was worked fairly regularly until the late 1890s. Total recorded production for 1863-1909 was about $18,356,000 with an average value per ton of approximately $30. Stuart reported that assessments of approximately $7,321,000 had been levied. Dividends of about $4,208,000 were paid; the last dividend was declared in 1869. In the 1930s the property was operated by the Arizona Comstock Mining Co. In the early and mid-1980s the patented claim was held by the United Mining Corp. through its New Savage Mine.

The mine's name commemorates Leonard Coates Savage, one of the six original locators. Savage is reported to have moved from Maine to California in 1850 and arrived on the Comstock in 1859. He soon disposed of his interest in the claim and settled in Glendale, Nevada where he successfully engaged in farming and raised six children. His son, Frank Charles Savage, established the commercial firm of Savage & Son in Reno in 1893; the business continues to be operated by family members (Becker, 1882, 16; Carlson, 1955, 63; Church, 1879, 1; Lewis, c. 1962; Nevada Centennial Commission for Early Day Families, 1964 Storey Co., 154, Smith, 1943, 86-87, 292; Stuart, 1909, 42; WPA, 1941, no. 42, 1-13).

Mint Mine: Insignificant producer located about 4/10 mile east of the Savage Mine in southeast Virginia City. The claim was located in the mid-1860s, and in 1867 the Mint vein was discovered. In the mid-1870s the Mint Shaft was sunk to a depth of about 1,400 feet. The mine failed to yield anything of significance after the late 1870s (Comp, 1980; WPA, 1941, no. 34, 1).

Hale & Norcross: Patented claim which was originally staked in 1859 with about 400 feet along the Comstock Lode between the Savage and Chollar mines. In the early 1860s a three-compartment shaft was sunk to explore the property at greater depths. In 1868 after a bitter stockholders' battle William Sharon elected his board of directors, but his victory was described by Grant Smith as a barren one because Sharon's mills obtained little ore from the mine that year; in fact, three assessments were levied and stock prices tumbled. About that time James Fair returned to the Comstock from Idaho and succeeded in convincing John Mackay and James Flood that the mine could be made to pay. As a result, Fair, Mackay, and Flood made a verbal agreement to try to gain control of the stock. This agreement marked the beginning of the partnership which eventually came to be known as the Bonanza Firm. Flood quietly began to purchase the stock, and before Sharon realized it the new firm had control of the stock. At the annual stockholders' meeting in 1869 Mackay

and his associates were elected trustees; Flood was made president and Fair became superintendent. Soon the Hale & Norcross began to prosper under good management. Dividends of about $192,000 were paid in 1869, and in 1870 dividends amounted to approximately $536,000. The last dividend was paid in 1872. In the mid-1870s the Hale & Norcross, Chollar-Potosi, and Savage companies combined efforts to sink a large, four-compartment shaft, known as the Combination Shaft. Stuart reported that assessments of about $5,717,000 had been levied. In the early 1920s the property was operated by the Comstock Merger Mines Inc. and was taken over by the United Comstock Mining Co. in 1924. Total reported production for the period 1875-1926 was an estimated 453,000 tons, yielding about $10,146,000 for an average of almost $22.50 per ton. In the mid-1930s the Arizona Comstock Co. developed the massive Loring Cut on the property. In the early and mid-1980s the property was held by the United Mining Corp. through its New Savage Mine.

The mine bears the names of its original locators, G. Norcross (Norrowcross) and a Mr. Hale. Hale was reported to be an old man of the Mormon faith who had settled in Washoe several years before the Comstock discovery. He sold his interest in the mine in 1860 for $2,000-$3,000 and returned to Salt Lake City. Prior to coming to the Comstock, Norcross had been a seaman. He had the dubious reputation of being one of the most profane men on the Comstock. He sold out at the same time as his partner and went to San Francisco, where he is thought to have soon spent the money from the sale on high living and returned to the sea (Becker, 1882, 16; Carlson, 1955, 39-41; Comstock Paper No. 11, M & SP, 1876, v. 33, Dec. 9, 384; Lewis, c. 1962; Smith, 1943, 116-120, 292; Stoddard, 1950, 33-35; Stuart, 1909, 42; WPA, 1941, no. 22, 1-11).

Chollar Mine (as separate from the Chollar-Potosi Mine): This southeast Virginia City patented claim is made up of approximately 700 feet between the Hale & Norcross and Potosi mines. Henry Comstock claimed that he located the claim and gave it to William "Billy" Chollar. The claim was staked as a placer claim in 1859. Chollar explored the property unsuccessfully and sold out to return to his Grass Valley, California home. He is reported to have remained engaged in mining in California until the late 1860s when he moved to Connecticut where he later died.

In 1863 the Milton claim was absorbed by the Chollar. From 1865 to the late 1870s this mine was merged with the Chollar-Potosi. According to Stuart, the Chollar had levied assessments of about $2,086,800 and paid dividends of approximately $750,000. From 1908-1923 it was continuously mined for low-grade surface ore which could be processed at a profit through cyanidation. In the 1920s the mine was first under control of the Comstock Merger Mines Inc. and later the United Comstock Mining Co. Since 1963 it has operated as a tourist mine, and in the early and mid-1980s United Mining Corp.'s New Savage Mine held the claim (Becker, 1882, 16; Carlson, 1955, 29; Church, 1879, 1; Nevada Appeal, 1973, May 14 3:1-8; Smith, 1943, 103; Stoddard, 1950, 27; Stuart, 1909, 42; WPA, 1941, no. 12, 1-9; Gerald B. Hartley, Jr., 1982, personal commun.).

Milton Mine: According to Smith, "the Milton claimed to have the earlier location (than the Chollar) and actively developed its mine for several years, after which it was absorbed by the Chollar (c. 1863)." John Mackay was superintendent of the Milton in the early 1860s (Smith, 1943, 103, 238).

Potosi Mine (as separate from the Chollar-Potosi Mine): Mining claim staked in 1860, having about 400 feet along the Comstock Lode, overlapping that of the Chollar claim. The Chollar Co. claimed trespass, and after many costly court battles the two companies were merged as the Chollar-Potosi Mining Co. in 1865. In the late 1870s the Chollar-Potosi shares were increased to 224,000, making two separate companies having 112,000 shares each, with the north 700 feet to be the Chollar and the south 700 feet to be the Potosi. Thereafter the companies filed separate reports. From 1880-1886 the Potosi was explored at depths of about 2,400 to 3,000 feet through the Combination Shaft. Total reported

production from 1879-1897 was approximately 77,000 tons, yielding about $1,105,000 for an average of almost $14.50 per ton. Stuart reports that assessments of approximately $2,196,000 were levied. No dividends were paid. In the early and mid-1980s the property was held by the United Mining Corp. through its New Savage Mine.

The mine's name ultimately commemorates the famous silver mines of Bolivia that were discovered in 1545, and in three and one-half centuries produced an estimated $1,400,000,000 in gold and silver (Becker, 1882, 17; Carlson, 1955, 60-62; Church, 1879, 1; Stuart, 1909, 42; WPA, 1941, no. 40, 1-4).

Chollar-Potosi Mine: Large Comstock producer located between the Hale & Norcross and Bullion mines in southeast Virginia City. In 1860 the Potosi was located as a lode claim covering approximately 400 feet of the Chollar surface claim. In the early 1860s the Chollar Co. filed suit claiming trespass by the Potosi Co. After almost four years of costly court battles, a compromise was reached in 1865 with the two companies merging to form the Chollar-Potosi Mining Co. Through 1878 the mine yielded about $16,400,000, paid dividends of approximately $3,580,000, and made assessments of about $2,317,000. In the late 1870s the two mines again became separate, each with claims of about 700 feet (Smith, 1943, 88-89; WPA, 1941, no. 12, 1-9).

Combination Shaft: At one time this was the largest and deepest mining shaft in the United Sates. It was located southeast of Virginia City below the Chollar Mine. In the mid-1870s the Chollar-Potosi, Hale & Norcross, and Savage mines combined their efforts to sink this four-compartment shaft to facilitate exploration of the Lode at greater depths; the shaft's name is descriptive of the united or combined venture of these three companies. It was originally called the Requa Shaft for Issac L. Requa, superintendent of the Chollar-Potosi Mine, Combination Shaft, and William Sharon's mills. The shaft was sunk at a rate of about 2-1/2 feet per day and connected with the Sutro Tunnel at approximately 1600 feet beneath the surface. In the mid-1880s the shaft's operations were plagued by flooding. In 1886, when the shaft reached a depth of about 3250 feet, the double line of Cornish pumps could not handle the water when the shaft began to connect with adjoining mines. Consequently, it became necessary to install three hydraulic pumps to lift over 5,000,000 gallons of water per day from the shaft. Operations became so prohibitively expensive that the lower levels of the shaft were abandoned in 1886. It was reported that within just 36 hours of the shut-down, the water had risen to the 2400-foot level, flooding the entire lower workings of the Savage, Hale & Norcross, Potosi, and Chollar mines. The shaft was also known by the name of Chollar, Norcross, and Savage Shaft. There are more surface remains of this shaft than of any other early shaft on the Comstock (Becker, 1882, 8; Comp, 1980; WPA, 1941, no. 12, 4-15; no. 22, 3-4; no. 42, 4; Gerald B. Hartley, Jr., 1982, personal commun.).

New Savage Mine: This gold and silver mining operation, which started up in 1979 in southeast Virginia City, represented the first underground exploration of the Comstock Lode in at least 40 years. The mine is owned by the United Mining Corp. and holds the Chollar, Potosi, Savage, Hale & Norcross, Gould & Curry, Best & Belcher, and Consolidated Virginia patented claims in Virginia City. The mine's escape and ventilation shaft, the Chollar Raise, was dedicated by Senator Howard Cannon in August 1981. In 1982 the mine was reported to be on stand by but was to go into operation as soon as the price of gold exceeded $200 per ounce. It started production in 1983 and employed a peak of 100 workers. Production was stopped in April 1985 after $18,000,000 had been invested in its operation (Nevada Mining Association Bulletin, 1980, v. 4, no. 4, April, 15; Nevada State Journal, 1981, Aug. 7, 12; Reno Gazette-Journal, 1986, Jan. 18, 8B).

Julia Mine: Insignificant producer located about 3/10 mile southeast of the Fourth Ward School. The Julia claims were located in the early 1860s, but the major activity on the property occurred in the 1870s and 1880s. There was no reported production, and through 1881 assessments totalled about $1,361,000. The mine is reported to have closed in the early 1890s.

Helen Carlson reports that even though the origin of the name is undetermined, presumably Julia Bulette, famed courtesan of the Comstock, is commemorated. Ms. Bulette is thought to have arrived on the Comstock in 1859, and during her first winter there to have turned her cabin into a hospital for sick miners. She continued to endear herself to the miners through her generosity and charity. In return for her munificent gifts and numerous favors, she was elected honorary member of the Virginia City Fire Department's Virginia Engine Co. No. 1. In January 1867, at about age 35, she was strangled to death for her jewels, furs, and other valuables by John Millain (Millan, Milliean, Milleain, Millaein). She was buried by the Virginia Engine Co. in Flowery Cemetery (Carlson, 1974, 147; Comp, 1980; Doten, 1973, 938; Smith, 1943, 293; TE, 1867, Jan. 22, 3:1; WPA, 1941, no. 26, 1-2).

Chapter 4

VIRGINIA CITY'S MILLS

Most of the Comstock's ore reduction was done to the south of Virginia City in Gold Canyon and along the Carson River from Empire to below Dayton. Even though Virginia City was more of a mining than milling center, several very large mills, such as the California, Consolidated Virginia, and Nevada mills, were located in the area. Virginia City's mills are discussed from the north around the Cedar Hill area to the "Divide".

Cedar Hill Mill: Quartz mill which was situated at the mouth of Cedar Ravine in the early 1860s. It was reported to have cost about $35,000 and to have had a 40 horsepower steam engine, 12 tubs and 8 Knox pans, and 12 stamps with a capacity of 16 tons per day (Collins, 1864-65, 45; Kelly ,1862, 111; 1863, 162).

Sacramento & Meredith Mill: Reduction mill, belonging to the Sacramento and Meredith Mine, located north of Virginia City near Cedar Hill. In the early 1870s it was reported to have 20 stamps and a capacity of 50 tons a day but was idle (Lord, 1883, pl. 3; SMR, 1871-72, 138).

Summit Mill: This mill was located at the north end of Virginia City. The 1866 *State Mineralogist's Report* described it as a steam mill using 6 cords of wood a day and having 20 stamps, 11 Wheeler pans, 1 Varney pan, and a crushing capacity of 35 tons a day. The *Territorial Enterprise* reported that the mill shut down in 1870 and was dismantled in 1872 (SMR, 1866, 149; TE, Sept 3, 3:1; 1870, Sept. 15, 3:2; 1872, June 18, 3:1).

Pony Mill: Reported in 1877 to be a four-stamp mill located in a ravine just south of the Odd Fellows Cemetery in Virginia City. Its main building measured 20 x 38 feet; it could crush six tons in 24 hours; and it was working ore from the Sierra Nevada ledge for gold only (TE, 1877, Oct. 11, 3:2).

Mexican Mill: Cyanide mill built in 1911 near the Union Shaft in Virginia City to treat ores from the Mexican and other nearby mines. It was described by Carl Stoddard as an "all-slime mill without table concentrators," which operated successfully for a number of years. It had ten 1,250-pound stamps and a capacity of 90-100 tons a day. Reinforced concrete engine mounts remain at the mill site (Comp, 1980; Sanborn Map Co., 1923, sh. 1; Stoddard, 1950, 23-24).

Central Co.'s Mill: Quartz mill erected in 1860 by the Central Silver Mining Co. It was situated on D, Mill, and E streets in Virginia City and included an office, assay room, storehouses, carpenter and blacksmith shops, and lodging for employees. The main building was reported to measure about 153 x 30 feet. In the early 1860s it processed the richest ores from the Central, Gould & Curry, and Savage mines. In the 1866 *State Mineralogist's Report* it was listed as being a steam mill using 8 cords of wood a day and having 13 stamps, 4 Hepburn pans, and a crushing capacity of 12 tons a day (Bancroft, 1862, map; GHN, 1865, Mar. 29, 3:1; Kelly, 1863, 157; SMR, 1866, 148).

O'Farrell Mill: Early day quartz mill located on Mill Street about 1/4 mile below Virginia City. It was earlier known as the Ogden & Wilson Mill for its original owners, Richard Ogden and J. Downs Wilson, who built the mill in 1860 for about $40,000. Kelly's 1863 directory described it as having a main building measuring 40 x 80 feet, a 20 horsepower steam engine, 18 stamps, and a reduction capacity of 12 tons a day. The 1866 *State*

Mineralogist's Report listed it as a steam mill using 6 cords of wood a day, having 22 stamps and 12 Wheeler pans, and crushing 20 tons a day (Comstock Paper No. 16, M & SP, 1877, v. 34, Feb. 10, 81; GHN, 1864, Mar. 3, 3:1; Kelly, 1863, 158; SMR, 1866, 148).

Nevada Mill: In 1863 this quartz mill was reported to be located on 20 acres on Mill Street below the O'Farrell Mill, to have cost over $100,000, to have 16 stamps and 37 Wakelee pans, and to crush 30 tons of rock in 24 hours. At that time it was owned by the Empire Mining Co. of Gold Hill and was known as the Empire Mill. In 1867 it was described as having 21 stamps and a 40-ton-a-day capacity and running on Chollar-Potosi ore. By that time its name had been changed to Nevada Mill. A 1954 *Nevada State Journal* article reported that in the late 1860s it and the Lands Mill were foremost among Comstock milling companies. In the 1871-72 *State Mineralogist's Report* it was listed as having 20 stamps, a 50-ton-a-day capacity and was operating on ore from the Chollar-Potosi Mine (Bancroft, 1862, map; Kelly, 1863, 158-59; Nevada State Journal, 1954, Nov. 14, 6:2; SMR, 1871-72, 138; TE, 1867, Mar. 13, 3:1).

Kinkead Mill: Reduction mill erected in the late 1890s at the head of Sixmile Canyon in Virginia City. It was named for James H. Kinkead, whose Kinkead process was used by the mill. The mill operated on the principle of a giant pestle and mortar. In 1907 the mill was treating 35-40 tons per day of ore from Tonopah, Nevada. The mill also operated on low-grade ores and old dump materials from the Consolidated Virginia and Ophir mines. Debris and concrete pilings remain (Comp, 1980; Engineering & Mining Journal, 1907, v. 83, Feb. 9, 269-70, photo; Nevada State Journal, 1953, July 12, 6:3).

Consolidated Virginia Mill: Large reduction mill, owned by the Bonanza Firm-controlled Pacific Mill & Mining Co., which was located near the Virginia & Truckee Railroad yard in Virginia City. It cost $300,000; had 60 stamps, 40 pans, 20 settlers, and 4 agitators; and could process 250-260 tons of ore a day. It was destroyed by the Virginia City fire of 1875 and was rebuilt for approximately $350,000 (Lord, 1883, 348-49; Smith, 1943, 159; Texas Tech University, 1980, no. 32548).

California Mill: This large reduction mill was built in the mid-1870s by the Bonanza Firm-controlled Pacific Mill & Mining Co. at a cost of over $500,000 to process the "Bonanza" ores from the Consolidated Virginia and California mines. It stood about 100 yards east of the C & C Shaft in Virginia City. Eliot Lord described it as having 80 stamps, 46 pans, 20 settlers, and 4 agitators, with a capacity of reducing 380 tons per day. It was also known as the California Pan Mill and the California Stamp Mill. The mill was reported to be operating as late as 1887 (Comp, 1980; Lord, 1883, 349; Smith, 1943, photo, p. 160; TE, 1876, May 28, 3:2; 1876, Aug. 27, 3:2).

Gould & Carvills Mill: Quartz mill built in 1861 on the corner of Howard Street and Spanish Ravine in Virginia City. Kelly's 1863 directory reported it to possess 10 stamps and 6 Wheeler pans, to employ 9 men, and to reduce 12 tons of ore per day (Kelly, 1863, 156).

Spanish Mill: Was built in the early 1860s by the Mexican Mining Co. below its mine's tunnel in northeast Virginia City. Kelly's 1862 directory described it as having cost about $70,000, to have a main building measuring 38 x 88 feet, and to have 16 stamps with a 10-15 ton-a-day capacity. It was also referred to as the Mexican Mill (Bancroft, 1862, map; Kelly, 1862, 109).

Manhattan Mill: In 1869 the *Territorial Enterprise* reported that the old Manhattan Mill from the Carson River near Dayton had been moved to east Virginia City; it was owned by William Sharon's Union Mill & Mining Co. (TE, 1869, Mar.31, 3:4).

Hoosier State Mill: This mill stood on Silver Street between G and H streets in Virginia City. It was built in 1862, and the 1866 *State Mineralogist's Report* described it as being a steam mill using 3-1/2 cords of wood a day, having 8 stamps and 24 Knox pans, and reducing 12 tons a day. In the early 1870s it was processing ore from the Savage Mine and had 18 stamps with a capacity of 40 tons a day. It was also known as Lynchs Mill (Collins, 1864-65, 45; Kelly, 1863, 156; SMR, 1866, 148; 1871-72, 138; TE, 1870, June 24, 3:1).

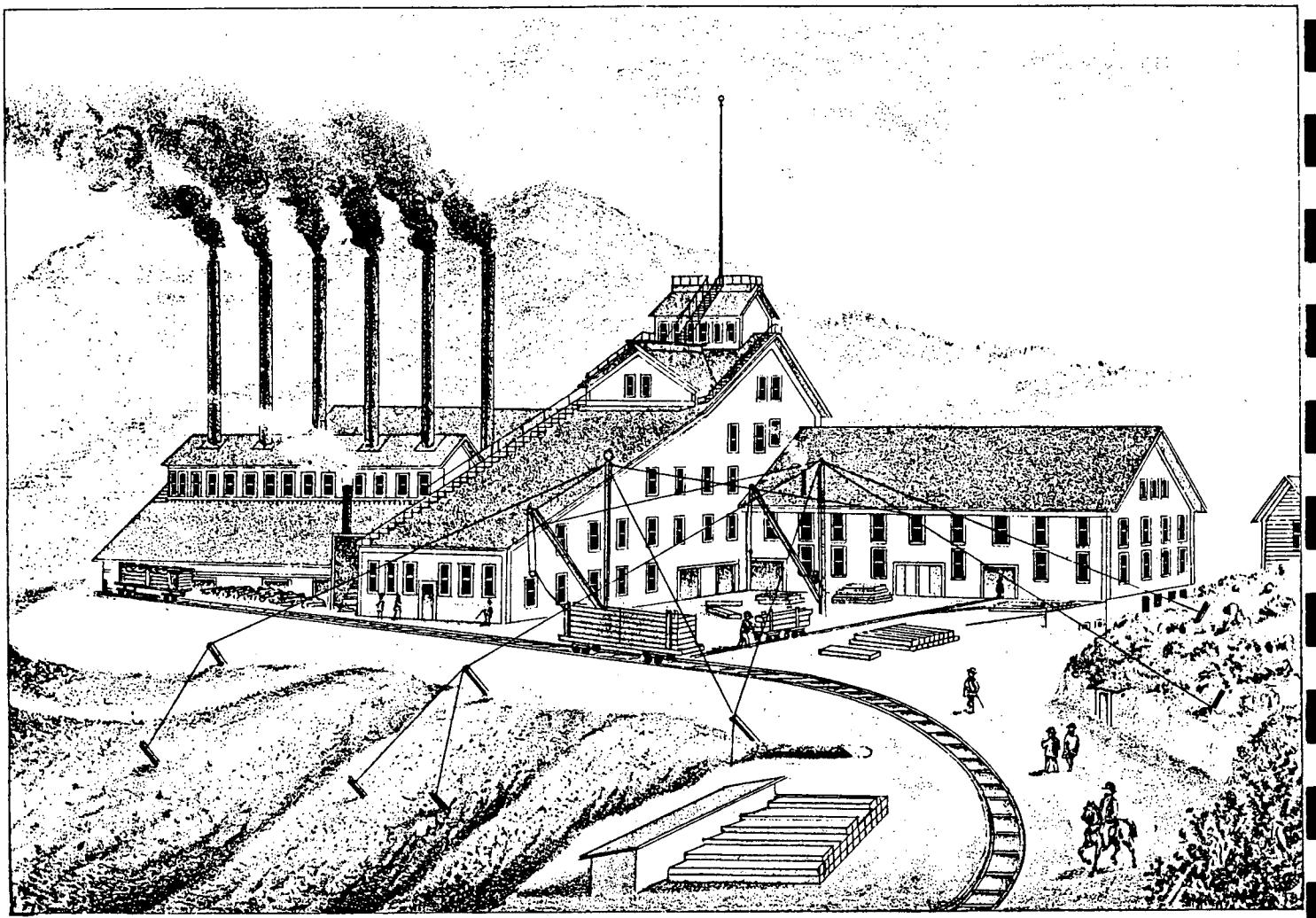
New Gould & Curry Mill: Reduction mill built in 1900 in southeast Virginia City. In 1907 it was reported to be crushing 50-55 tons per day of Tonopah, Nevada ore. It was also known as the Best & Belcher Mill (Comp, 1980; Engineering & Mining Journal, 1907, v. 83, Feb, 9, 270; Sanborn Map Co., 1907, sh. 5).

Nevada Mill: Reduction mill located in southeast Virginia City on the Chollar Mine. It was built in the late 1880s and had the distinction of being the last Washoe Process mill on the Comstock and the first Comstock mill to use electric power. The mill processed low-grade Chollar ore and some Hale & Norcross ore; it was reported to have 60 stamps, 15 settling pans, 30 amalgamating pans, and 10 agitators (Shamberger, 1969, 38; Smith, 1943, 256).

S H & N Mill: Flotation mill, erected in the early 1930s by the Arizona Comstock Co., which was originally known as the Arizona Comstock Mill. It is located near the site of the Hale & Norcross tunnel in southeast Virginia City. From 1934-1938 the mill processed ore from the Loring Cut, resulting in a net recovery of about $1,437,000 from approximately 460,000 tons. Later the mill was purchased by the Siskon Corp. and became known as the S H & N Mill (Siskon Hale & Norcross Mill).. In the mid-1970s Intermountain Exploration Co. purchased and operated the mill. In 1977 Intermountain dismantled about three-quarters of the mill and moved it to Como in Lyon County, Nevada. The ore bin and part of the plant remains next to the Virginia & Truckee Railroad tracks near the New Savage Mine (Nevada Appeal, 1975, Oct. 8, A3; 1978, Mar. 1, A8:1; Stoddard, 1950, 33-35; Steve Russell, Field Geologist, Intermountain Exploration Co., 1982, personal commun.).

Winnebago Mill: Reported in 1877 to be located on the ravine north of the Ophir Mine. It was a small steam mill with only four stamps and a six-ton-a-day capacity; it had a blacksmith shop, water tank, slum pond, and wood chute (TE, 1877, Nov. 1, 3:3).

Ophir Mill: Cyanide mill built in 1912 for the Ophir Silver Mining Co. It processed tailings and had a capacity of about 100 tons per day. Its location in the Virginia City area is undetermined (M & SP, 1912, v. 105, Nov. 31, 703).



"UNION SHAFT,"
JOINT SHAFT OF THE "SIERRA NEVADA," "UNION CON." & "MEXICAN" MINING COMPANIES.
VIRGINIA NEVADA.

Union Shaft (Angel, facing p. 60).

Chapter 5

THE MINES AND MILLS OF SIXMILE CANYON

The Setting: Sixmile Canyon

This historically important canyon can be seen when looking east from C Street in downtown Virginia City. A rocky dome by the name of Sugarloaf dominates the canyon's landscape. Sixmile is one of two major canyons of the Comstock; Gold Canyon is the other. The canyon head is in northeast Virginia City opposite Ophir Ravine, and its mouth is on the Carson Plains about five miles northeast of Dayton. From the early 1860s to the early 1900s several large quartz and tailings mills flanked the canyon. Among the largest mills were the Butters, Olive Branch, Bassett, De Lands, Empire State, and Parke & Bowie mills. These mills plus the mines of the Flowery District attracted quite a population to the canyon. The road through the canyon was a major transportation link to the Comstock. The canyon was named for its length. Today only a few crumbling foundations bear mute testimony to the canyon's earlier importance.

The Flowery Mining District

Early day precious metal mining district located in the Flowery Range above Sixmile Canyon about one mile northeast of Sugarloaf. The district was discovered in 1859 by James F. Rogers, who also was among the earliest locators in Gold Hill. It appears that for a while the district was also known as the Ro(d)gers District. In November 1859 the district's miners adopted the laws of the Gold Hill District and in March 1860 published their revised mining laws. In 1861 the district was reported to have 339 inhabitants. In the early years the Lady Bryan was the district's most prominent mine; later the Berry Glory Hole produced a significant amount. Now the district is part of the Comstock District.

A settlement by the name of Flowery or Flowery City was established in 1860 to serve the Flowery District and several quartz mills in the area. In the early 1860s Andrew Marsh described the community as a "prosperous mining town." The town could not compete with Virginia City and soon declined.

Apparently the name "Flowery" was first applied to a canyon east of Virginia City in the Flowery Range where wild flowers grew in great abundance in the springtime (Carlson, 1974, 114; Kelly, 1862, 112; 1863, 163; Marsh, 1972, 212; Paher, 1970, 31; Stoddard, 1950, 48-49; TE, 1859, Nov. 26, 3:1; 1859, Dec. 10, 2:1; 1860, Mar. 3, 2:4; 1860, Mar. 10, 2:3; Wheeler, 1867-77, map).

Lady Bryan Mine: This mine was situated about one mile northeast of Sugarloaf. The claim was located in the early 1860s, and a shaft was started in 1863. By 1876 the mine had produced an estimated 3,400 tons, yielding about $64,500 for an average yield of nearly $19 per ton. In the 1870s a ten-stamp mill operated on the property. After the early 1880s only intermittent work was performed on the mine until it was taken over by the Flowery Mines Co. in the 1920s. Total reported production between 1868-1932 was an estimated 6,000 tons, yielding about $87,500 for an average of $14.50 per ton. Through 1881 assessments were approximately $687,000; no dividends were paid.

The mine was named for the wife of Mark H. Bryan. No information could be found on Mrs. Bryan, but Mr. Bryan came to Carson County, Utah Territory in 1859, had an interest in the Chollar Mine in the early 1860s, and was a member of the First Legislative Assembly of the Territory of Nevada in 1861 (Bonham & Papke, 1969, pl. 2; Marsh, 1972, 668; SMR, 1871-72, 138; Stoddard, 1950, 48-49; Smith, 1943, 292; WPA, 1941, no. 32, 1-2).

Berry Glory Hole: Post Comstock-era mining operation located on the north side of Sixmile Canyon approximately one mile east of Flowery Peak. The mine was discovered in 1918 by two brothers, William and Tom Berry. In the 1920s the mine had a production of approximately 250,000 tons, yielding about $945,000 for an average of about $3.75 per ton. It was reported to be a true glory hole and is also known as the Flowery Mine (Bonham & Papke, 1969, pl. 2; Stoddard, 1950, 49).

North Bonanza Mine: Was located in the Flowery District about 1 6/10 miles east of Flowery Peak. The claim was located in the early 1860s, but its most profitable years were 1878-1880, after which the main ore body pinched out (WPA, 1941, no. 36, 1).

Two recent operations reported in the canyon were the Sixmile Mine and the Flowery Property. The **Sixmile Mine** was listed in 1976 as an active gold mine operated by Trans Globe Minerals Inc.; its exact location was not given. Also reported as active in the mid-1970s was the Deterra Mines Co.'s **Flowery Property,** which was listed as a gold and silver leaching operation in the eastern Flowery District (Directory of Nevada Mine Operations Active During Calendar Year 1976, 51; Payne & Papke, 1977, map).

The Mills of Sixmile Canyon

Sixmile Canyon was noted more for its mills than its mines. Its mills will be treated in the approximate order of their location from the top of the canyon on the canyon's mouth. Some of the mills at the upper reaches of the canyon, such as the O'Farrell, Nevada, and Kinkead mills, were in or so close to Virginia City that they were covered with the Virginia City mills. The Gould & Curry and Omega mills, both of which were located at the intersection of Sevenmile and Sixmile canyons, were treated in Chapter 2.

Parke & Bowie Mills: Several mills at various times around the 1870s operated under this name in Sixmile Canyon. The Parke & Bowie mills were among the first tailings mills on the Comstock. Until the advent of the tailings mills, it is estimated that close to $20,000,000 in tailings had been lost down the Carson River from the Carson River and Gold Canyon mills. As early as 1867 the Janin & Parke Mill was operating as a tailings mill about 1/2 mile below the Gould & Curry Mill. It was reported by the *Territorial Enterprise* " ... to be the finest running little mill in the state." It was named for its proprietors Henry and Louis Janin and Ira S. Parke.

One of the Parke & Bowie mills was reported to be located approximately 1/8 mile below the intersection of Sixmile and Sevenmile canyons. The Express Mill, located about 1/8 mile southeast of Sugarloaf, was also a Parke & Bowie mill. The Gould & Curry Mill, covered in Chapter 2, was sold to Parke and Bowie in 1871 and was abandoned shortly after. In November 1871 the *Territorial Enterprise* reported that Parke & Bowie had control of nearly all of Sixmile Canyon and that besides the tailings reservoirs they already owned, they were constructing a new reservoir below Sugarloaf which would hold 250,000 tons of tailings. The article went on to say that "their mill is the most perfect of its kind in the state, and they have reduced the workings of tailings to a science." In 1872 feeders for the mills were reported to be the old Savage works at Empire and the Nevada, Bassett, Lands, and Winfield mills. In addition, tailings were being transported from the Mexican Mill on the Carson River by railroad to Virginia City and then hauled down the canyon road to the mills. An 1872 *Territorial Enterprise* article on the Parke & Bowie mills stated that "when the millmen of the present day think of the thousands of rich tailings that floated away down the Carson River in the early days, they are almost ready to tear their hair. There are doubtless millions in gold and silver in the bed of the river and in the sink, into which the river empties ... "

The Parke & Bowie Co. filed for bankruptcy in December 1873. Apparently the bankruptcy did not completely end their milling activities in the canyon because in 1876 the *Territorial Enterprise* listed the Railroad Mill as belonging to the Parke brothers. Ira S. Parke and David Bowie were the owners of these mills. One of the mills was reported still to be operating in the mid-1880s. In the mid-1870s the Express and Railroad mills were owned by the Union Mill & Mining Co., which was controlled by William Sharon. Alternate names for the Parke & Bowie mills include Parkes Mill, Bowie Mill, Janin and Parke Mill, Express Mill, and Railroad Mill (Angel, 1881, 594; Comp, 1980; Lord, 1883, pl. 3; Moran, 1923, map; SMR, 1871-72, 138; TE, 1871, Nov. 11; 3:2; 1871, Nov. 14, 3:1; 1872, Mar. 21, 3:2; 1876, Mar. 21, 3:1; 1878, June 10, 3:2).

Utah Mill: Listed in the Collin's 1864-65 directory as located in Sixmile Canyon north of Silver Hill. It was erected in 1864, its main building measured about 60 x 106 feet, and it had a 90 horsepower engine (Collins, 1864-65, 46).

Butters Mill: Large cyanide plant which was situated in Sixmile Canyon at the foot of Sugarloaf. It was erected in 1902 and operated until the late 1920s. At the time it was the largest cyanide mill in the United States, treating about 100 tons per day and employing approximately 300 persons. Originally it operated as a tailings mill, but later it processed ore from Tonopah, Nevada and local near-surface ore. The mill had the distinction of being the most elaborate of the cyanide tailings mills on the Comstock. It was named for its proprietor, Charles Butters. Extensive foundations remain (Comp, 1980; M & SP, 1907, v. 83, Feb. 9, 269-73; Sanborn Map Co., 1907, sh. 1; Smith, 1943, 258).

De Lands Mill: Reduction establishment which was located about midway down Sixmile Canyon. It is reported to have had 15 stamps and a 35-ton-a-day capacity and to be named for its owner. In the 1871-72 *State Mineralogist's Report* it was listed as being idle (Comstock Paper No. 10, M & SP, 1876, v. 33, Dec. 2, 361; SMR, 1871-72, 138; SCR, Locations, 1870, v.A, 455, sketch map).

Empire State Mill: Early mill situated in Sixmile at the foot of Sugarloaf. In Kelly's 1862 directory it was reported to possess 10 stamps and crush 12 tons a day. In Collin's 1864-65 directory it was described as running on both steam and water; having a 40-foot water wheel, a 15 horsepower engine, 10 stamps, and a 12-ton capacity; using Knox pans with false bottoms and Wakelee's patent flue pans; and employing 10 men. The 1866 *State Mineralogist's Report* listed it as a steam mill using 5 cords of wood a day and having 15 stamps; 20 Knox, 2 Wheeler, and 2 Hepburn pans in the amalgamating department; and a capacity of 15 tons a day. In the early 1870s it was reported to have 15 stamps and a capacity of 40 tons a day but was idle. Operations were resumed later in the 1870s and continued into the 1880s. Rubble walls remain (Collins, 1864-65, 42; Comp, 1980; Kelly, 1862, 113; 1863, 163; Lord, 1883, pl. 3; SMR, 1866, 148; 1871-72, 138).

Sugarloaf Mill: Early day quartz mill reported in Kelly's 1862 directory to have 4 stamps and to be located in Sixmile Canyon near Sugarloaf. Kelly's 1863 directory described it as being run by water on an overshot wheel generating about 20 horsepower, having 4 stamps and 2 arastras, and milling ore from the St. Johns claim (Bancroft, 1862, map; Kelly, 1862, 113; 1863, 163).

Flowery Mill: Reduction establishment which was located about three miles east of Virginia City. In Kelly's 1863 directory it was described as having a 40 horsepower engine, 8 stamps, a 12-ton-a-day capacity, and 20 employees. In 1869 it was reported to be operating again after repairs (Kelly, 1863, 164; TE, 1869, Mar. 20, 3:2).

Lady Bryan Mill: Reduction facility which was located in Sixmile Canyon above the Lady Bryan Mine. In the early 1870s it was reported to have 10 stamps and to be idle. In the early 1880s the mill was moved to the Rock Point Mill site on the Carson River near Dayton (Comp, 1980; SMR, 1871-72, 138).

Olive Branch Mill: Kelly's 1863 directory reported this to be the largest quartz mill in the Flowery Mining District. It was built in the early 1860s in the town of Flowery and had 16 stamps, 32 Knox pans, a 24-ton-per-day capacity, 12 employees, and a main building measuring about 60 x 72 (Kelly, 1863, 164).

Jolly Giant Mill: Ore reduction plant shown on an 1876-77 map as situated in Sixmile Canyon south of the mouth of Flowery Canyon, which would place it about 1-1/2 to 2 miles northeast of Sugarloaf. No other information was found (Wheeler, 1876-77, map).

Fisher Mill: According to Stoddard, in 1906 this mill was processing ore from the Chollar and Potosi mines. It was located below Sugarloaf in the Flowery District (Stoddard, 1950, 26; Storey County Assessment Roll, 1980-81, 92).

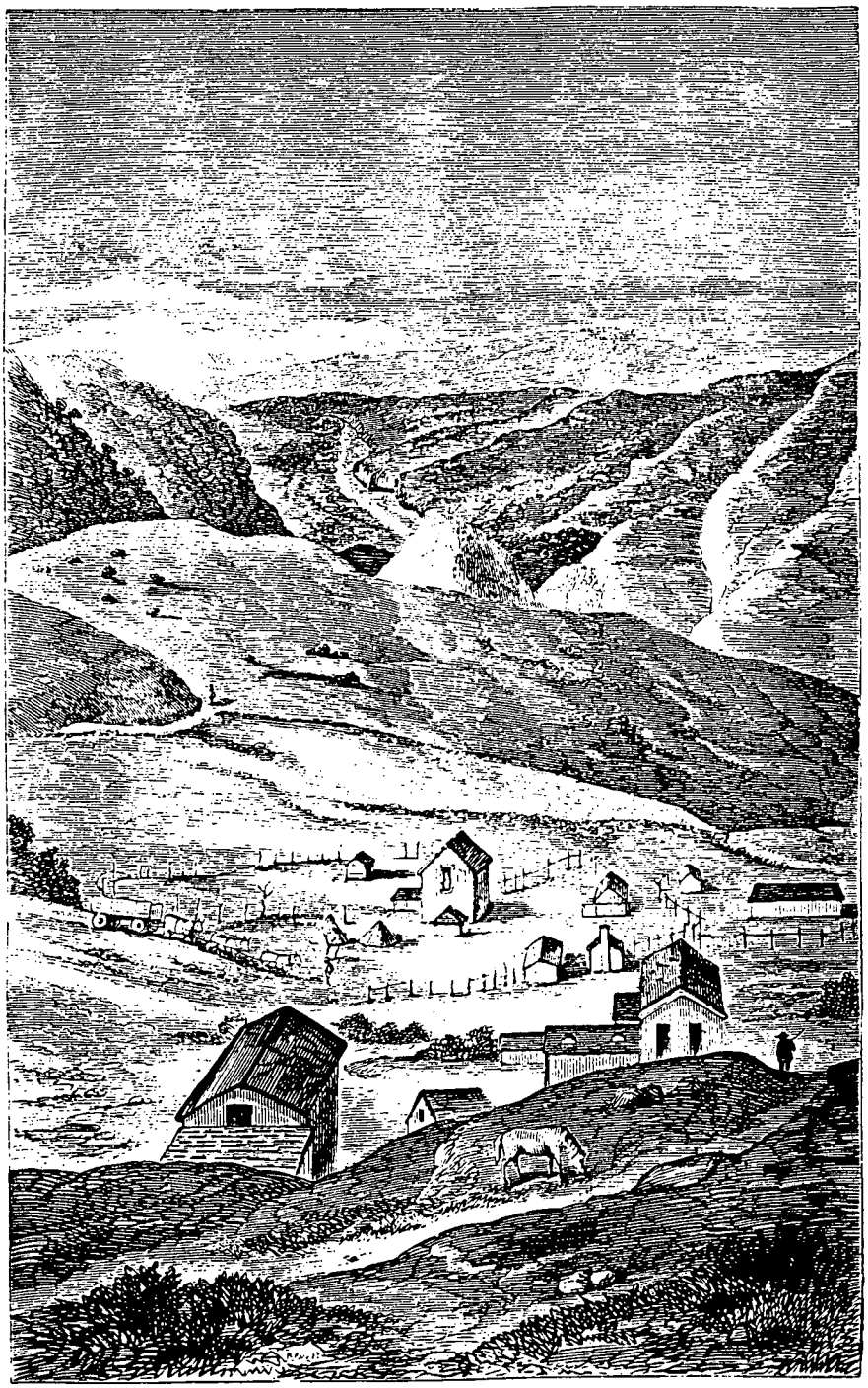
Rogers Mill: In Kelly's 1863 directory this quartz mill was reported to be located approximately three miles east of Virginia City and to be processing ore from the Rogers claim in the Flowery District. At that time it had a 30 horsepower engine, 8 stamps, 9 wooden tubs, 1 Knox pan, and a capacity of 14 tons a day. In 1866 it was listed as a steam mill using 3-1/2 cords of wood a day and having 8 stamps with a 12 ton capacity. The mill is shown on Moran's 1923 map as located on the J. L. Rogers' property. In 1870 the *Territorial Enterprise* reported that the mill was being moved to the desert below the mouth of Sixmile Canyon to process an immense deposit of tailings (Kelly, 1863,164; Moran, 1923, map; SMR, 1866, 148; TE, 1870, Feb. 13, 3:3).

Bassett Mill: In Kelly's 1862 directory this mill was reported to be owned by A. Bassett & Co., to be located in the Flowery District, to possess a main building measuring about 40 x 40 feet, and to have 16 stamps with a crushing capacity of 24 tons a day. It was also known as the Suncook Mill. Another Bassett or Suncook Mill was located in Sevenmile Canyon (Kelly, 1862, 113; Moran, 1923, map).

Bartola Mill: In Kelly's 1862 directory this quartz mill was listed as being located at the junction of Flowery Toll Road (now Sixmile Canyon Road) and Desert Canyon. Kelly's 1863 directory described it as a water-powered mill having 10 stamps, 36 amalgamating pans, a 10-ton-a-day capacity, and 10 employees. Variant spellings are Bertola, Bertoli, and Bartoli. There was another Bartola Mill located in Gold Canyon below Silver City (Collins, 1864-65, 316; Kelly, 1862, 114; 1863, 164).

Several other small mills dotted the canyon. Moran's 1923 map shows **Bossells Mill** located to the southeast of Sugarloaf. The same map shows **Jennings Mill** below Rogers Mill near the mouth of the canyon on property owned by George M. Jennings. The **Centennial Mill** had a brief history. A July 12, 1876 *Territorial Enterprise* article reported that it had recently gone into operation at the mouth of the canyon, that it was owned by Charles Baker & Co., and that it was doing well for a time but was beginning to suffer from the low price of silver. A month later the *Territorial Enterprise* wrote that the $16,000-tailings mill was destroyed by fire after operating only two months and was only partially insured. The **Clark Mill** was listed for sale in 1868 as a water-powered mill with 5 stamps and 3

pans, owned by Mrs. Clark; it was destroyed by fire in 1870. Its exact location in the canyon was not given. A **Davis Mill** was reported to be somewhere in Sixmile in the early 1900s. The **Frink Mill** was listed in Kelly's 1863 directory as located about two miles below Flowery, owned by W. H. Frink, and to be water-powered with 2 arastras. In 1869 the **Proctor Mill** was advertised as being for sale; it was a water-powered mill. Its exact location in the canyon was not given. Kelly's 1862 directory listed **Steens Mill** as being located on Flowery Road (Kelly, 1862, 121, 125; 1863, 164; Moran, 1923, map; Nevada State Journal, 1953, July 12, 6:3; TE, 1868, Jan. 15, 2:6; 1869, Nov. 21, 2:6; 1870, Apr. 1, 3:1; 1876, Aug. 12, 3:3).



VIRGINIA CITY. (From the Northeast.)

Virginia City (Burton, *The City of the Saints*, 1862, p. 498).

Chapter 6

THE MINES OF THE "DIVIDE" AND THE BRUNSWICK LODE

The "Divide"

This name is used to describe the topographic high point at the head of Gold Canyon, separating Gold Hill from Virginia City. The area extends from lower Virginia City southeast to Mt. Grosh. During the Comstock boom, the area was heavily populated, forming a strip settlement between Virginia City and Gold Hill. Its residents often referred to it as Middletown. Reports indicate that during the days of the Comstock robberies were a common occurrence there, and Davis wrote that the area had the reputation of being the windiest region of the state. The area had few or no mills, but it did have some well-known minor-producing mines, which will be described below (Carlson, 1974, 99; Cleator, 1913, 190; Davis, 1913, 997; De Quille, 1947, 100).

Bullion Mine: Well-known Comstock mine located about 1/2 mile north of Gold Hill on the north side of Bullion Ravine. This claim was staked in 1859, and the claims absorbed by it include the Corser (Casser, Cosser), Eastern Slope, Wellington, and Fairview, giving the Bullion about 944 feet on the Comstock Lode. The mine's name turned out to be a gross misnomer, because even though work was performed on the property from 1862 to the early 1900s, there was never any recorded production from the mine. Through 1881 assessments totalled about $3,872,000. John Mackay became a trustee in 1863 and was elected superintendent in the late 1860s, but not even as shrewd a mining engineer and businessman as Mackay could squeeze any commercial ore out of the Bullion. The only reason the mine was able to continue to raise money for exploration was because it had rich mines nearby on both sides (the Chollar-Potosi and Consolidated Imperial). The Bullion is a patented claim (Becker, 1882, 17; Carlson, 1955, 7, 21; Church, 1879, 1; Lord, 1883, 305; Smith, 1943, 103-05, 292; Stuart, 1909, 42; WPA, 1942, no. 8, 1-2).

Ward Mine: This property was located on the "Divide" due south of the Julia Mine and about 7/10 mile northeast of Gold Hill. The claim was staked in 1860, but not much work was done on the property until the mid-1870s when the four-compartment Ward Shaft was begun. Operations were suspended in the early 1880s and resumed from 1889-1894. From 1903-1912 the Ward Shaft was used by the Yellow Jacket, Belcher, Bullion, and Crown Point mines for exploration and pumping of water (Lord, 1883, pl. 3; Stoddard, 1950, 25; WPA, 1941, no. 53, 1-2).

Exchequer Mine: This disappointing producer was located north of Gold Hill between the Bullion and Alpha mines. Some surface exploration was performed in the early 1860s by the Minerva Mining Co., which later sold to the Exchequer Mining Co., a London company. Little work was done on the property until 1870, and no underground exploration was undertaken until the mid-1870s. No activity was reported after the mid-1890s. Assessments of about $1,020,000 were made, and no dividends were paid. Now the mine is probably part of Houston International Mineral Corp.'s Con Imperial Pit. Carlson reports that Buckeye was an earlier name for the mine. The Exchequer is a patented claim (Becker, 1882, 17; Carlson, 1955, 34; Church, 1879, 1; Comp, 1980; Lewis, c. 1962; Stuart, 1909, 42; WPA, 1941, no. 18, 1-2).

The Brunswick District

Precious metal mining district located on the Brunswick Lode, previously known as the Occidental or Monte Cristo Lode. The Lode is located about 1 1/4 miles east of Virginia City and Gold Hill and lies roughly parallel to the Comstock Lode. It was originally known as the Silver Star District. Activity in the district was reported as early as 1863. The St.

Johns and Occidental claims on the southern portion of the Lode first attracted the attention of the early prospectors. The Lode is about 2 1/2 miles in length from the Occidental Mine on the south to the Keyes Mine on the north. The district is now part of the Comstock District. The district's most important mines will be discussed below (SMR, 1866, 68; Stoddard, 1950, 12, 46-47, 70-71; TE, 1863, Apr. 3, 3:2).

Occidental Mine: Brunswick Lode mine, also known as the Brunswick Mine because of its location on the Brunswick Lode, is located approximately 1 1/4 miles east of Gold Hill on the Occidental Grade (Nevada State Route 341). The Occidental Grade was originally constructed by the Occidental Mining Co. in the 1860s to connect its mine with the Carson River quartz mills, a distance of about eight miles. The Occidental claim was staked in the early 1860s for purposes of producing lime. A kiln was erected on the property, and some lime was produced. In 1863 good silver-gold ore assaying as much as $100 per ton was encountered in a tunnel, and a fairly steady production was maintained until the early 1870s. It is reported that John P. Jones, later to become a well-known Comstock mine superintendent and United States Senator from Nevada, made his first stake here. The property was worked intermittently into the 1890s. Total reported production between 1868-1894 from approximately 25,000 tons was about $440,000 for an average of a little over $17.50 per ton. Through 1881 assessments of about $355,000 were levied. Dividends of approximately $20,000 were paid, the last dividend being paid in 1869. From the early 1950s to the early 1960s it was operated as a tourist mine under the name of the Old Comstock Mine. The Occidental Mill was built in 1870 on Occidental Grade about 1/4 mile south of the Occidental Shaft. In an 1871-72 report it was listed as having 20 stamps and a 50-ton-a-day capacity and was operating as a tailings mill. The mill was still operating in the mid-1870s (Comp, 1980; Lord, 1883, pl. 3; Smith, 1943, 292; SMR, 1871-72, 138; Stoddard, 1950, 46-47; WPA, 1941, no. 37, 1-2; Gerald B. Hartley, Jr., 1982, personal commun.).

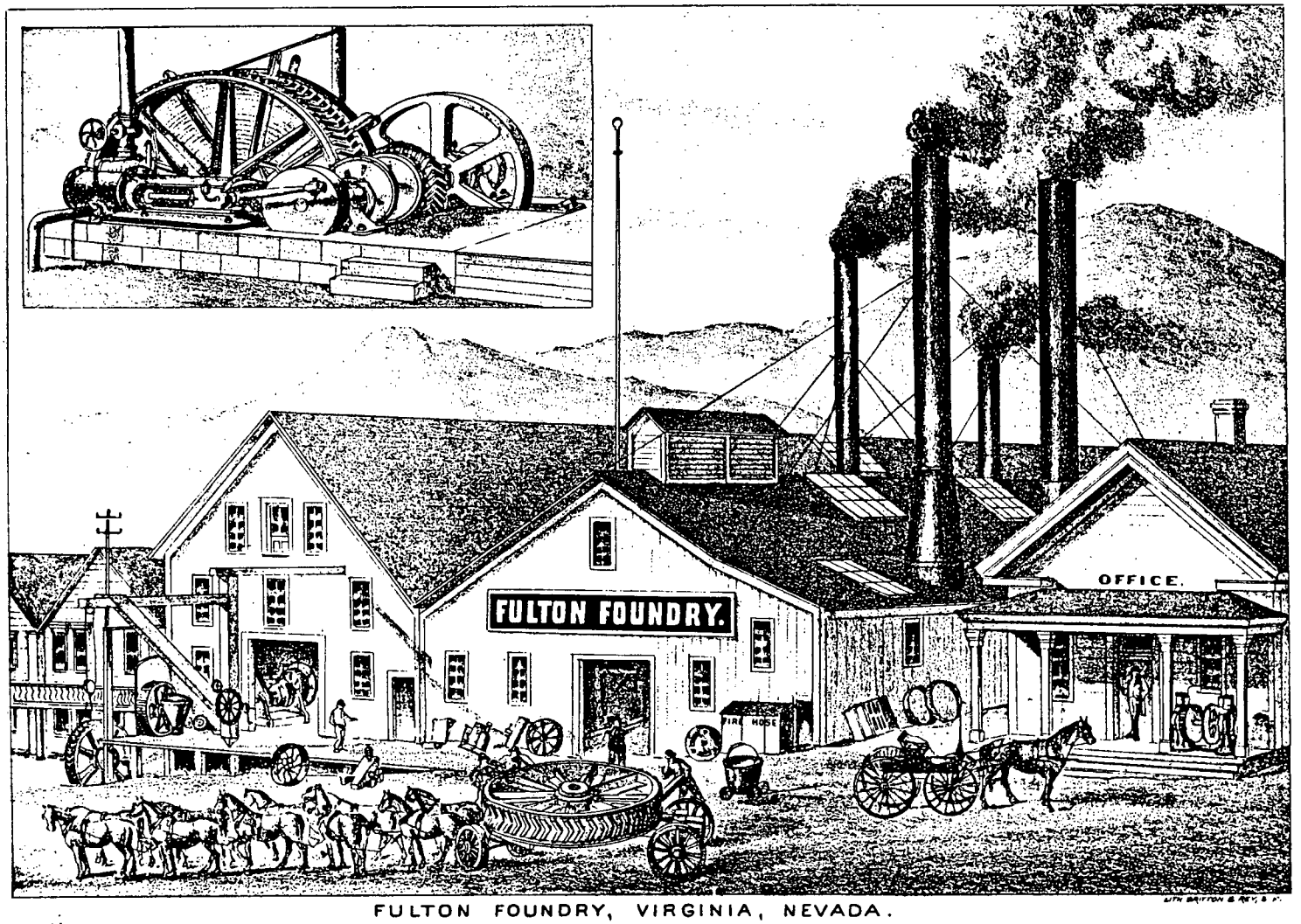
St. Johns Mine: Brunswick Lode mine located east of the "Divide." In the early 1870s many thousands of tons of low-grade silver-gold ore were mined from the claim's surface. In the 1890s about 10,000 tons were reported to have been extracted. The claim is now included in the southern half of the Sutro Tunnel Grant (Stoddard, 1950, 47; WPA, 1941, no. 47, 1).

Baily Mine: Claim located east of Virginia City, adjacent to the Cosmopolitan claim on the Brunswick Lode. In the early 1870s the surface was explored with trenches, and ore valued from $50,000-$60,000 was reported to have been extracted (Lord, 1883, pl. 3; WPA, 1941, no. 4, 1).

Cosmopolitan Mine: Minor Brunswick Lode producer which was situated between the forks of Sixmile and Sevenmile canyons near the Gould & Curry Mill. In 1870 it was reported to be producing ore yielding $21-$24 per ton (Lord, 1883, pl. 3; TE, 1870, June 30, 3:2).

Keyes Mine: Brunswick Lode property located on the east side of Sevenmile Canyon adjoining the Monte Cristo property. In the 1880s a shaft was sunk and some ore was shipped. In 1911 the property was under lease to the Mexican Gold & Silver Mining Co., and in the late 1920s the Belmont-Uncle Sam Co. did some work on the claim. The only reported production was about 550 tons, yielding approximately $4,000 in the early 1930s when the mine was being operated by the Western Empire Mining Co. According to Carl Stoddard, "the Keyes mine was named from the Pat Keyes claims of early location on the projection of the lode to the north of the Monte Cristo mine." (Stoddard, 1950, 47-48; WPA, 1941, no. 29, 1).

Monte Cristo Mine: Located on the northern extension of the Brunswick Lode in Sevenmile Canyon near the point where Sixmile and Sevenmile canyons meet. This property was extensively developed from the early 1870s to the early 1880s, and the estimated yield for the period was $500,000. Its bullion yielded about one-half gold and the rest in silver. From 1912-1914 the Mexican Gold & Silver Mining Co. operated the mine as the Comstock Monte Cristo Mining Co. During that time large tonnages of low-grade ore were extracted and transported by aerial tram to the Mexican Mill. For the period 1879-1914 total recorded production was approximately $286,500 from about 62,500 tons for an average of about $4.50 per ton (Stoddard, 1950, 47; WPA 1941, no. 35, 1).



FULTON FOUNDRY, VIRGINIA, NEVADA.

Fulton Foundry (Angel, facing p. 28).

Chapter 7

GOLD HILL AND ITS MINES

The Setting: Gold Canyon

This well-known drainage has played a prominent role in the history of the Comstock. It is about seven miles in length, heading on the southern slopes of Mt. Davidson and terminating near Dayton on the Carson River. Placer gold was found at the canyon's mouth as early as 1849 or 1850 by a party of Mormons passing by on their way from Salt Lake City to California. William Prouse is generally given credit for discovering a few flecks of gold here, and John Orr is thought to have named the place Gold Canyon in honor of the discovery. Expecting much richer finds of gold in California, the party moved on but was delayed in Carson Valley because of deep snow in the Sierras. While waiting for the snow to melt, John Orr and a companion returned to Gold Canyon to do some additional prospecting. They were reported to have found some small nuggets but to have left for California as soon as the snow in the Sierras melted. Word of their find spread, and soon prospectors established the camp of Johntown in the lower part of the canyon. From 1852-1855 approximately 100 prospectors worked the canyon when there was enough water, averaging about $5 per day per miner. After the mid-1850s earnings started to drop off, and only a few hard-core prospectors remained, among them James Finney, better known as "Old Virginny," and Henry Comstock (Old Pancake).

It was not until 1859 that Finney, John Bishop, Alec Henderson, and Jack Yount discovered the southern portion of the Comstock Lode in the canyon at a place they called Gold Hill. After that, the canyon figured prominently in the development of the Comstock. In addition to being an important mine and milling center, it served as a major access route to the mines above in Virginia City. By 1863 the length of the canyon resembled a continuous city of mines, mills, stores, homes, restaurants, offices, hotels, and saloons. Activity in the canyon began to decline in the early 1880s with the decline of the rest of the Comstock. Now Nevada State Route 342 traverses the canyon, passing through the picturesque residential communities of Gold Hill and Silver City, which serve as colorful reminders of the canyon's important role in the history of the Comstock (Carlson, 1974, 121; Gianella, 1936, 19; Lord, 1883, 11-12; Mordy & McCaughey, 1968, 181-83; Smith, 1943, 1-2).

The Town of Gold Hill

This celebrated mining town is located in Gold Canyon at the south end of the Comstock approximately 1 1/2 miles below Virginia City. Gold was discovered here in early 1859 by James Finney and companions when they traveled up Gold Canyon from Johntown to investigate a small yellow hill that Finney had noticed on a hunting trip. After washing a few pans that averaged about 15 cents of gold per pan, the men each located placer claims measuring approximately 50 x 400 feet. At the time these humble prospectors were totally unaware that they had discovered the southern portion of the Comstock Lode.

Dan De Quille quotes John Bishop on how the place was named:

> After we had measured the ground we had a consultation as to what name was to be given the place. It was decidedly no Gold Canon, for it was a little hill, so we concluded to call it Gold Hill.

Stuart makes the following interesting observations concerning the naming:

> Gold Hill received its peculiar name from a rocky eminence, forty or fifty feet high, in the head of Gold Canyon, which turned out to be, in reality, a bold outcrop of one of the richest 'chimneys' of the Comstock Lode. The gold hunters, for years working along up the canyon, finally tracked upon it as the real source of their gold, and

> Sandy Bowers and a few others located the whole of the little hill directly in ten-foot claims ... Consequently the hill did not last long, and its place soon became literally a hollow in the ground. The town was naturally built on the steep slopes and hillsides immediately surrounding, still retaining the name of Gold Hill, with the hill left out.

When earnings at the "new diggings" reached as much as $20 per day, most of the inhabitants of Johntown and Dayton moved up the canyon to Gold Hill. Nicholas Ambrosia (Dutch Nick) is given credit for constructing the first building in Gold Hill, a small frame saloon. Next a small log boarding house and restaurant was built for and run by "Eilley" Orrum Hunter Cowan, soon to become Mrs. "Sandy" Bowers.

From these humble beginnings Gold Hill soon became a major mining and milling center. For a while in the early 1860s Gold Hill's growth was so spectacular that it rivalled that of Virginia City. Between 1864 and 1869 the town's growth slowed, but activity resumed with the construction in 1869 of the Virginia & Truckee Railroad and the discovery of the Crown Point-Belcher Bonanza in 1871. In 1877 Gold Hill had a population of about 8,000. In 1878, when activity on the Comstock began to slow, Gold Hill began a steady decline. Gold Hill's post office operated from July 1862-February 1943. It is now a quiet residential community of about 60 inhabitants, flanking both sides of Nevada State Route 342 (Angel, 1881, 571; De Quille, 1947, 22-23; Harris, 1973, 27; Paher, 1970, 29-31; Sanborn-Perris Map Co., 1877, sh. 9; Stuart, 1909, 35; TE, 1875, June 20).

The Gold Hill Mining District

After James Finney and companions discovered the south end of the Comstock Lode at Gold Hill in early 1859, most of the prospectors a few miles down Gold Canyon at Johntown abandoned that camp for the Gold Hill discovery. A few months later, after the northern end of the Lode was discovered at the "Ophir diggings," the rush to Washoe began, and Gold Hill grew along with it. The original laws for the Gold Hill Mining District were published in the *Territorial Enterprise* in June 1859, and revised laws were published in March 1860. In the early 1860s the district was known for its "Little Gold Hill Mines," composed of the original claims of Finney, John Bishop, Alec Henderson, and Jack Yount, plus those of Henry Comstock, "Sandy" Bowers, Joseph Plato, William Knight, and James Rogers. Later all these claims through consolidation became the famous Consolidated Imperial Mine. In the early 1870s the largest producers of the district were the Crown Point, Belcher, and Yellow Jacket. Now the district is part of the Comstock District. The Gold Hill mines are discussed north to south along the Comstock Lode (Stoddard, 1950, 12; TE, 1859, June 25, 2:3-4; 1860, Mar. 10, 4:1).

Alpha Mine: Disappointing producer which was situated between the Exchequer and Consolidated Imperial mines in upper Gold Hill. This patented claim was originally staked in 1859 and first worked in the early 1860s. It was originally composed of approximately 276 feet on the Comstock Lode and later was expanded to about 300 feet. Its ore was reported to have had a higher silver content than that of the other Gold Hill mines. The mine operated fairly regularly until the 1890s, but its main productive period was 1863-1870. It levied assessments of about $870,000 but never paid any dividends. Now the mine site is part of Houston International Minerals Corp.'s Con Imperial Pit (Becker, 1882, 17; Carlson, 1955, 15; Church, 1879, 1; Comp, 1980; Lewis, c. 1962; Smith, 1943, 292; Stuart, 1909, 42; WPA, 1941, no. 1, 1-2).

Consolidated Imperial Mine: Important mine which is located about 3/10 mile north of Gold Hill between the Alpha and Challenge-Confidence mines. The mine was the result of the consolidation of the Bacon, Bowers, Consolidated, Eclipse, Empire North, Empire South, Imperial North, Imperial South, Piute, Rice & Co., Trench & Co., and Triglone & Co. claims

for a total of about 451 feet on the Comstock Lode. These claims were composed of the original Gold Hill claims staked by Finney, Bishop, Yount, Henderson, Comstock, Plato, Rogers, Bowers, and Knight in 1859. They were first worked as placer claims and became known as the "Little Gold Hill Mines." During the early period each small mine sank its own incline shaft, but beginning in 1867 they used either the Imperial-Empire or Eclipse shafts. In 1876 William Sharon merged all the small mines into the Imperial Consolidated Mining Co. in order to cut overhead costs. From 1864-1891 total recorded production for the "Little Gold Hill Mines" and later the Consolidated Imperial was approximately $9,232,000 from about 440,000 tons for an average yield per ton of almost $21. Now the Imperial portion of the claim is part of Houston International Minerals Corp.'s Con Imperial Pit. The Con Imperial is a patented claim.

Carlson reported that the name Imperial was selected for the consolidation because the Imperial owned more footage on the Lode than the other claims participating in the merger (Becker, 1882, 17; Carlson, 1974, 85; Comp, 1980; Lewis, c. 1962; Lincoln, 1923, 226; Stoddard, 1950, 15; Stuart, 1909, 42; WPA, 1941, no. 23, 1-6).

The Little Gold Hill Mines

The "Little Gold Hill Mines" refer to the original Gold Hill claims staked by James Finney, John Bishop, Alec Henderson, Jack Yount, Henry Comstock, Joseph Plato, James Rogers, William Knight, and "Sandy" Bowers in early 1859. These mines were the major producing mines of the Gold Hill District in the early 1860s. From 1859-1866 the Bowers, Plato, Consolidated, Piute, Rice, Eclipse, Bacon, and Trench claims were reported to have produced about 325,000 tons, yielding approximately $12,000,000, with an average yield per ton of almost $37. Dividends of approximately $3,500,000 were paid. No assessments were reported. For the period 1866-1876 the "Little Gold Hill Mines" produced approximately 160,000 tons, yielding about $3,520,000 for an average of $22 per ton. Dividends of about $500,000 were paid, with the last dividend being declared in 1867. Assessments of approximately $100,000 were levied (Smith, 1943, 292-93).

The following "Little Gold Hill Mines" were among the claims absorbed by the Consolidated Imperial in 1876:

Bowers Mine: This world-famous precious metal claim was one of the first to be recorded in Gold Hill and was reported to be the richest of the "Little Gold Hill Mines." Shortly after the original Gold Hill discovery in early 1859 by James Finney and his companions, Lemuel Sanford "Sandy" Bowers, along with Henry Comstock, Joe Plato, William Knight, and James Rogers went to check out the new discovery and, liking what they saw, located a 50-foot claim which they subdivided into five 10-foot strips. The Rogers claim, which was adjacent to the Bowers claim, soon became the property of Allison "Eilley" Orrum Hunter Cowan, who ran a boarding house in the area. Sandy and Eilley soon married, giving them 20 feet on the Comstock Lode. They built a house near their mine in Crown Point Ravine and erected a mill called the Thistle or Bowers Mill to process their ore.

The Bower's story is unusual among the early locators on the Comstock in that they did not sell out early but rather worked their claim for several years and were reported to have become Nevada's first millionaires. Sandy Bowers, who was born in the Missouri backwoods was described as honest, kind-hearted, convivial, and lacking in formal education. Eilley was born in Scotland and became a Mormon convert after arriving in the United States. She was reported to be twice-divorced before marrying Bowers.

It was not long before the Bowers were realizing thousands of dollars a month from their fabled mine, causing Sandy to remark that he had money to throw to the birds. After building their fine home (Bower's Mansion) in Washoe Valley and indulging in an extended tour and shopping spree in Europe, the income from their mine and mill started to decline. In 1868 their mill was nearly buried by a spring flood and in attempting to dig it out and repair it, Sandy protracted a cold which steadily worsened, resulting in his death in April

1868 at about 35 years of age. He is reported to have left an estate of about $89,000, but creditors soon took everything. After the mid-1870s Eilley became a penniless wanderer, eking out a living by telling fortunes with her crystal ball, which she called her "peep stone." She died in Oakland in 1903. Both Sandy and Eilley are buried on a hill behind Bower's Mansion (Carlson, 1955, 20; Comstock Paper No. 9, M & SP, 1876, v.33, Nov. 25, 352; Smith, 1943, 96; TE, 1868; Apr. 22, 2:4; Virginia City Times, v. 1,no. 1,1).

Plato Mine: This was one of the earliest and richest Gold Hill claims. It was located in 1859 and adjoined the Bowers claims on the north. It eventually became part of the Consolidated Imperial Mine. Joseph Plato, for whom the mine was named, was the locator and owner of this ten-foot claim. He was one of the few early locators on the Comstock who made money and kept it. He died in 1863, leaving his widow financially well off (Carlson, 1955, 60; Comstock Paper No. 9, M & SP, v.33, Nov. 25, 253).

Bacon Mine: 45-foot claim which was staked in 1859 and named for its original locator, Hiram Bacon. Bacon, who owned other valuable mining property in the area, became quite wealthy but had a wife who dissipated his fortune. He was reported to have died a pauper in a Placerville, California almshouse. According to Carlson, the claim was taken up by the Consolidated Imperial, but its name has been retained (Carlson, 1955, 18; Comstock Paper No. 7, M & SP, 1876, v.33, Oct. 14, 249; TE, 1866, Dec. 7, 3:1).

Empire Mine: This claim was staked in 1859. Up to 1876 the mine had produced about 153,000 tons, yielding approximately $3,489,000 for an average of nearly $23 per ton. It paid dividends of about $509,000, the last of which was paid in 1867. Assessments of approximately $516,000 were made. In 1876 the claim became part of the Consolidated Imperial (Carlson, 1955, 33-34; Smith, 1943, 292).

Harold & Co. Mine: Early Gold Hill claim named for John Har(r)old. The claim was incorporated in the Empire claim, and the earlier name was lost. Harrold is reported to have left Nevada flat broke and later to have become a cook for a group of miners in Honduras (Carlson, 1955, 42).

Imperial Mine: Up to 1876 this lucrative Gold Hill claim had produced an estimated 232,000 tons, yielding approximately $5,444,000 for an average yield per ton of almost $23.50. It paid dividends of about $1,067,000, the last being paid in 1869. Assessments of about $1,770,000 were levied. In 1876 the claim was absorbed by the Consolidated Imperial (Smith, 1943, 293).

Rogers Mine: Gold Hill claim which was purchased or otherwise obtained by "Eilley" Orrum Hunter Cowan and later, through her marriage to Lemuel "Sandy" Bowers, became part of the legendary Bowers claim. The claim was named for James F. Rogers, one of the early locators on the Comstock. Rogers had interests in many valuable mines in Gold Hill, Virginia City, and the Flowery District. In 1860 he was found in his room dead from a gun shot wound; it was never determined whether his death was murder or suicide (Carlson, 1955, 62; Comstock Paper No. 9, M & SP, 1876, v.33, 353).

The **Eclipse Mine** was a 30-foot claim which was one of the original claims staked in 1859 by Finney, Bishop, Henderson, Yount, Comstock, Rogers, Plato, Bowers, and Knight. The **Triglone & Co. Mine** was a 21-foot claim, named for John Triglone, who later became a successful quartz miner in Amador County, California. The claim was staked in 1859. Another claim to be eventually absorbed by the Consolidated Imperial was the **Trench & Co.** claim. It was a 20-foot claim named for Joseph Trench, who along with Erastus Sparrow, bought the property in 1859. Trench is reported to have been an energetic, good-natured

man of sturdy physique. The **Rice & Co. Mine** was named for John W. Rice, who was among the early locators on the Comstock. This claim, later known as the **Pioda claim,** measured about 13 feet. Adjacent to the Rice or Pioda claim was the **Consolidated Mine,** a 21-foot claim which in 1866 the *Gold Hill News* reported to be extracting about 40 tons per day. All of these claims and others were eventually absorbed by the Consolidated Imperial Mine (Carlson, 1955, 33, 62, 65; Collins, 1864-65, 316; GHN, 1866, Jan. 10, 3:1; SMR, 1867-68, 28).

Winters Mine: In 1866 this mine was reported by the *Gold Hill News* to be located in Gold Hill adjacent to the Consolidated Mine. At that time it was producing about 100 tons per day of ore that was reported to be of high gold content. The "Winters Boys," John D. and Joseph D., were early locators in Virginia City and Gold Hill and also had an interest in the Aurora Mill in Dayton. John D. Winters was a well-known Comstock mine superintendent who was in charge of the Yellow Jacket and Kentuck mines in the 1860s and was also active in Nevada politics. The Winters family are a well-known Nevada pioneer family (GHN, 1866, Jan. 10, 3:1; Kelly, 1862, 218-19; Smith, 1943, 17, 238).

Con Imperial Pit: Massive open-pit precious metal mine located in upper Gold Hill at the bottom and immediately west of Greiners Bend. In the 1940s the pit was operated by the Sutro Tunnel Coalition Co. It lies in the vicinity of the original discovery site of the Gold Hill Branch of the Comstock Lode by James Finney and companions in early 1859. In the late 1970s and early 1980s the property was held by Houston International Minerals Corp., which extensively enlarged the cut in its gold-silver extractive activities from May 1979 to December 1981. Mining activity at the pit has now ceased because of Houston's unsuccessful attempt to relocate the historic Greiners Bend portion of Nevada State Route 342 in order to be able to further expand their pit. Backfill work to help stabilize existing pit slopes was underway in early 1982. The pit is also known as the Imperial Pit (Stoddard, 1950, 36-37; John S. Miller, HIMCO Nevada Operation's Public Affairs Manager, 1982, personal commun.).

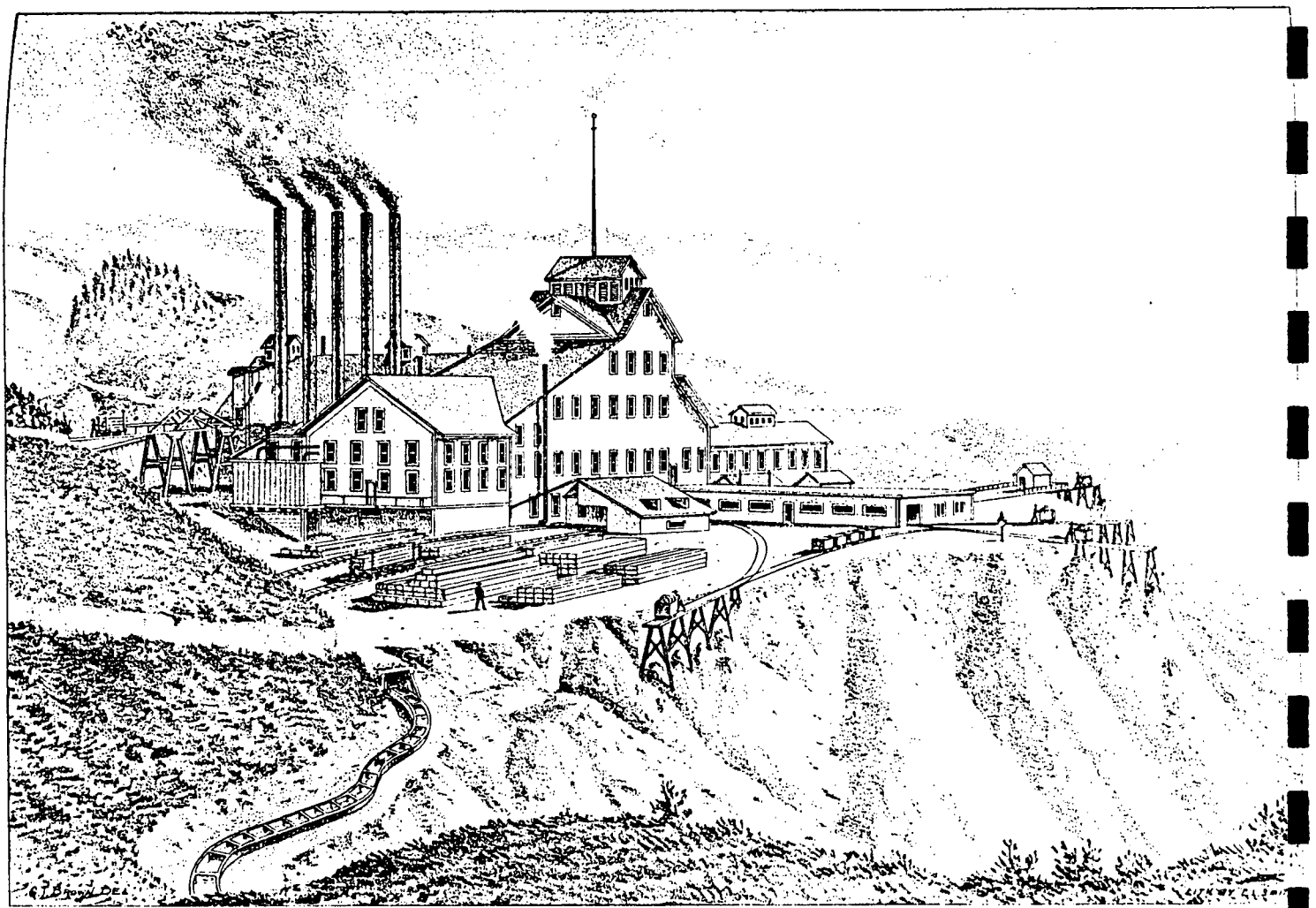
Confidence Mine: Gold Hill claim staked in 1859 with about 130 feet on the Comstock Lode. Up to 1874 the mine yielded approximately $1,076,000 from about 41,000 tons for an average yield per ton of slightly over $26. It paid dividends of about $78,000, the last being paid in 1865. In 1874 it was consolidated with three other claims to form the Challenge-Confidence claim. It is a patented claim (Carlson, 1955, 28-30; Lewis, c. 1962; Smith, 1943, 293; WPA, 1941, no. 11, 1-4).

Challenge Mine: Claim, located in 1859 in Gold Hill, which consists of approximately 90 feet on the Comstock Lode. Up to 1874 the mine produced about 7,000 tons, yielding approximately $200,000 for an average per ton of slightly over $28.50. In 1874 it became part of the Challenge-Confidence consolidation. The Challenge claim is a patented claim (Carlson, 1955, 28; Lewis, c. 1962; Smith, 1943, 293; WPA, 1941, no. 11, 1-4).

Burke & Hamilton Mine: This well-known, early location was located adjacent to the Bowers claim. It was named for William Burke and A.C. "Lon" Hamilton. Hamilton was a Comstock mine superintendent who was in charge of the Chollar, Imperial, and Savage mines at various times. The claim became part of the Challenge-Confidence consolidation (Carlson, 1955, 21-22; Smith, 1943, 240).

Logan & Holmes Mine: Early Gold Hill mine which Kelly's 1862 directory described as one of the best in the area. It was named for its owners, Hugh Logan, J. R. Logan, and James P. Holmes (Kelly, 1862, 220).

Yellow Jacket Mine: Major Gold Hill mine located about 1/10 mile north of Gold Hill between the Consolidated Imperial and Kentuck mines. The 957-foot claim was staked in 1859 and first worked in the early 1860s. Rich ore was first struck in 1863 and again about



NEW SHAFT.
HOISTING WORKS OF THE YELLOW JACKET SILVER MINING CO., GOLD HILL, NEVADA.

Yellow Jacket Mine hoisting works (Angel, facing p. 44).

two years later. William Sharon gained control of the mine in the mid-1860s, and under his direction it experienced a period of bad management. With Sharon in control the mine was producing well and paying dividends, but it was levying assessments almost equal to the dividends. One of the reasons for this was that the ore was processed at Sharon's mills at very high treatment cost. The catastrophic underground fire in April 1869, which started in the Yellow Jacket and spread to the Kentuck and the Crown Point, claimed 37 lives. The Bonanza Firm of John Mackay, James Fair, James Flood, and William O'Brien gained control of the mine in the mid-1870s and sank the East Yellow Jacket Shaft, also known as the New Yellow Jacket Shaft. The shaft was located about 1/4 mile east of Gold Hill and was part of a "third line" of vertical shafts sunk in the mid-1870s in an attempt to tap the Comstock Lode at about 3,000 feet beneath the surface. The shaft cost an estimated $2,000,000 and reached a depth of 3,060 only to encounter barren quartz and floods of hot water. In the early 1880s the mine connected with the Sutro Tunnel. About 1883 William Sharon regained control of the mine and ran the mine for years while holding only a fraction of its stock. In 1915 the Yellow Jacket, Crown Point, and Belcher mines consolidated under the Jacket-Crown Point-Belcher Mining Co. The mine operated on a fairly regular basis into the 1920s. Dividends of approximately $2,184,000 were paid; the last dividend was paid in 1871. According to Stuart, assessments of about $5,824,000 were made. Total recorded production for the period 1864-1919 was about $17,530,000 from an estimated 998,000 tons for an average yield per ton of a little over $17.50.

According to a popular legend, the mine was named Yellow Jacket because the locators found a nest of yellow jackets in the surface rock while they were preparing to explore the vein. Helen Carlson feels that this is a somewhat naive explanation, because certain traditional names tend to have connected with them traditional anecdotes which explain the name origin. She goes on to say that Yellow Jacket could also refer to an article of clothing or be another instance of name transfer from other western mines (Angel, 1881 59; Carlson, 1955, 68-69; Gold Hill Records, Locations, 1859, Book A, 14; Smith, 1943, 90-94, 293; Stoddard, 1950, 27; Stuart, 1909, 42; WPA, 1941, no. 56, 1-8).

Kentuck Mine: Major Comstock producer located between the Yellow Jacket and Crown Point mines at the mouth of Crown Point Ravine about 1/10 mile northwest of Gold Hill. The patented claim was originally staked in 1859 with approximately 95 feet along the Comstock Lode. Its first significant ore body was found in the mid-1860s. John Mackay bought into the Kentuck in 1863 and made his first fortune there. Beginning in 1866 the Kentuck shared a bonanza with the Crown Point and Yellow Jacket. From 1866-1869 the Kentuck was one of the most profitable mines on the Comstock, yielding an estimated $3,641,000 and paying dividends of about $1,142,000. Operations were suspended in the mid-1890s after all commercial ore was exhausted. Recorded production for the years 1865-1893 was approximately $6,166,000 from an estimated 215,000 tons for an average yield per ton of over $28.50. Through 1881 assessments of about $337,000 were made, and dividends of approximately $1,252,000 were paid. The last dividend was paid in 1870.

The mine's name honors John "Kentuck" Osborne (Osborn, Osburn), a native of Kentucky who prospected in Gold Canyon for several years before the discovery of the Comstock. Osborne was a large owner in the Kentuck, the Ophir, and several other claims. At one time he was fairly wealthy but spent his money freely and quickly. When he died in Silver City in the mid-1860s, he was reported to be of moderate circumstances (Becker, 1882, 18; Carlson, 1955, 42; Comstock Paper No. 7, M & SP, 1876, v. 33, Oct. 14, 249; Lewis, c. 1962; Smith, 1943, 27, 106, 293; Stuart, 1909, 42; WPA, 1941, no. 28, 1-4).

Challenge-Confidence Mine: This property had approximately 238 feet on the Comstock Lode between the Consolidated Imperial and Yellow Jacket mines. The original claim was located in 1859 by early Comstockers James Finney, John Bishop, Jack Yount, and Alec Henderson. The Challenge-Confidence mine resulted from a consolidation in 1874 of the Burke & Hamilton, Confidence, and Challenge claims and about 18 feet acquired from the Imperial

South. Between 1867-1897 reported production for the claims before and after the consolidation was an estimated 76,000 tons, yielding about $1,715,000 for an average of about $22.50 per ton. The property is now part of Houston International Minerals Corp.'s Con Imperial Pit (Comp, 1980; Stoddard, 1950, 27; WPA, 1941, no. 11, 1-4).

Crown Point Mine: One of the largest producers on the Comstock, the Crown Point is located in Gold Hill between the Kentuck and Belcher mines. This 540-foot patented claim was originally staked in 1859. In the early 1860s a four-compartment shaft was started. Rich ore yielding about $70 per ton was found at the 600 and 700-foot levels in 1867. In 1871 John P. Jones, Crown Point superintendent who was later to become United States Senator from Nevada, reported the discovery of a fabulously rich ore body shared with the Belcher Mine which became known as the "Crown Point-Belcher Bonanza." The news caused Crown Point stock to jump from about $2 to $1825 per share, and the bonanza produced an estimated $60,000,000 between the two mines. In 1871 the mine was controlled by William Sharon, but he sold about 4,100 shares of Crown Point stock to Alvinza Hayward for an estimated $1,400,000 before the true extent of the bonanza was known. This huge stock transaction left Hayward and John P. Jones in control of the mines. In 1915 the Crown Point, Yellow Jacket, and Belcher mines united to form the Jacket-Crown Point-Belcher Mining Co. In the mid-1920s the United Comstock Mining Co. was operating the mine, and it was worked profitably by the Sutro Tunnel Coalition Co. in the 1930s and early 1940s. Reported production for the period 1864-1939 was approximately $35,361,000 from an estimated 1,404,000 tons for an average yield per ton of slightly over $25. According to Stuart, the mine levied assessments of approximately $2,990,000. Dividends of about $11,588,000 were paid, with the last dividend being declared in 1875 (Becker, 1882, 18; Carlson, 1955, 32; Church, 1879, 1; Lincoln, 1923, 224, 226; Lord, 1883, 284; Smith, 1943, 128-31, 293; Stuart, 1909, 42; WPA, 1941, no. 14, 1-9).

Gold Hill Tunnel Mine: This Gold Hill District claim, which was located in the early 1860s, was approximately 4,000 feet long and situated east of the Bullion, Exchequer, Alpha, Consolidated Imperial, Yellow Jacket, Kentuck, and Crown Point claims. Exploration continued sporadically from the time the Gold Hill Tunneling Gold & Silver Co. was formed in 1864 to 1873 when work on the claim was suspended. Little ore of commercial value was found (WPA, 1941, no. 20, 1).

Belcher Mine: After the Consolidated Virginia and California mines, this and the Crown Point mines were the largest producers on the Comstock. The Belcher is located about 1/4 mile south of the Crown Point Mine in Gold Hill. The 1040-foot claim was staked in 1859 and first worked in 1860. In 1871 the fabulously rich ore body later known as the Crown Point-Belcher Bonanza was discovered. Apparently the boundary line between the two mines passed through the heart of the bonanza, dividing it into two almost equal parts. The Belcher's portion of the bonanza proved to be richer and more productive. At that time William Sharon controlled the Belcher, and he and his associates William Ralston and Darius Ogden Mills profited handsomely from the bonanza. The mine operated on a fairly regular basis through 1920. In 1915 the Belcher, Crown Point, and Yellow Jacket mines united to form the Jacket-Crown Point-Belcher Mining Co. Reported production for the period 1868-1916 was about $35,233,000 from an estimated 960,000 tons for an average of a little over $36.50 per ton. Dividends of approximately $15,397,000 were paid, the last of which was paid in 1876. Through 1881 assessments of about $2,419,000 had been made. In the early 1980s the property was held by Houston International Minerals Corp.

The mine was named for E. Belcher, one of the original locators. Before arriving on the Comstock in 1859, Belcher was reported to be a California rancher. He was described to be a gentleman of quiet disposition who possessed good business acumen. He is reported to have returned to California after selling his Comstock mining interests (Becker, 1882, 18; Carlson, 1955, 18; Church, 1879, 1; Comp, 1980; Lincoln, 1923, 226; Smith, 1943, 128-31, 293; Stoddard, 1950, 27; WPA, 1941, no. 6, 1-6).

West Belcher Mine: Minor Gold Hill District mine located about 2/10 mile west southwest of Gold Hill. The claim was staked in 1859, but exploration did not begin until the 1870s. Some production occurred from 1875-77 after which the mine closed. It appears that the mine's name is descriptive of its location west of the Belcher Mine (WPA, 1941, No. 54, 1).

Apple & Bates Mine: 32-foot claim, owned by Robert Apple and J. S. Bates, which was located south of the Belcher Mine. In 1864 the *Gold Hill News* described the mine as a "segregated portion of the Belcher" and reported that it was being steadily worked. In 1865 the Segregated Belcher Mining Co. was formed by Robert Apple from the Apple and adjacent Midas claim. Apple was superintendent of the Segregated Belcher Mine and later of the Sierra Nevada Mine in Virginia City and the New York Hoisting Works in Gold Hill (Doten, 1973, 2287; GHN, 1864, May 20, 3:1; 1865, July 13, 3:1; Kelly, 1862, 176; SMR, 1867-68, 28).

Segregated Belcher Mine: This Gold Hill mine had about 160 feet along the Comstock Lode between the Belcher and Overman mines. No work was done on the property until 1862. The Segregated Belcher Co. was formed by Robert Apple in 1865 from the Apple and Midas Claims. From the mid-1860s to the early 1870s a small but steady production was maintained from the mine's upper levels. From 1872-1880 exploration of the mine's greater depths proved fruitless, so operations were suspended. The mine reopened from the late 1880s to the early 1900s. In the mid-1920s the United Comstock Mining Co.'s operations extended through the claim. Total reported production for the period 1867-1898 was an estimated 6,700 tons, yielding about $118,000 for an average yield per ton of a little over $17.50. Assessments totalled approximately $378,000, and no dividends were paid (Church, 1879, 1: GHN, 1865, July 13, 3:1; Stuart, 1909, 42; WPA, 1941, no. 44, 1-3).

Overman Mine: This claim, staked in 1859 and first worked in the early 1860s, had about 1,200 feet along the Comstock Lode adjoining that of the Segregated Belcher Mine. A three-compartment shaft was begun in the early 1860s. In the early 1870s operations were suspended because of flooding at the lower levels; to remedy the problem pumps were installed in the mid-1870s. The Overman Shaft was part of a "third line" of vertical shafts sunk in the mid-1870s to tap the Comstock Lode at great depths. The mine was operated intermittently until it was taken over by the Consolidated Chollar, Gould & Curry, and Savage Mining Co. in the early 1930s and was operated regularly by that company except from 1944-45 when activity was suspended because of War Production Order L 208. The company began surface mining in 1940, and by the late 1940s the Overman Pit measured roughly 1,000 feet long x 800 feet wide x 300 feet deep. Between 1866-1937 recorded production was approximately $2,545,000 from an estimated 339,000 tons for an average yield per ton of $7.50. Up to 1881 no dividends had been paid, and assessments of about $3,450,000 had been levied.

The mine's name honors John Overman, an immigrant from Indiana, who staked the claim in 1859. Overman is reported to have been a quiet, older man who sold his mining interests for a trifle (Bancroft, 1890, 133; Carlson, 1955, 55-56; Church, 1879, 1; Smith, 1943, 293; Stoddard, 1950, 19-20, 38-39; Stuart, 1909, 42; WPA, 1941, no. 39, 1-4).

Caledonia Mine: Mining property situated south of the Overman Pit at a point approximately 1/2 mile southwest of Gold Hill. The Caledonia emerged from the consolidation of seven claims in 1861, by the Caledonia Tunnel Co., giving it a total of about 2,188 feet on the Comstock Lode. John Mackay was superintendent of the mine in the 1860s. For the period 1871-1914 reported production was approximately $340,000 from an estimated 27,000 tons for an average of a little more than $12.50 per ton. Assessments of about $3,210,000 were levied, and no dividends were paid (Carlson, 1955, 24-25; Smith, 1943, 103, 238; Stuart, 1909, 42; WPA, 1941, no. 9, 1-4).

Knickerbocker Mine: Minor Comstock property located approximately 8/10 mile southwest of Gold Hill near the Caledonia Mine. Doten described it as the "most southerly of the working claims of the Comstock" (apparently he did not regard the mines of the Silver City District as part of the Comstock). The claim had about 1,200 feet on the Comstock Lode and was first worked in the early 1860s. Work was suspended in the 1860s because of difficulties in collecting assessments and a general depression in mining. In the early 1870s a three-compartment shaft was sunk. The mine closed in the late 1870s due to flooding at the lower levels and litigation. Assessments amounted to about $564,000. There was no reported production, and no dividends were declared (Doten, 1973, 1141; Smith, 1943, 293; WPA, 1941, no. 30, 1).

New York Mine: Gold Hill District claim located in Gold Canyon about 1/2 mile below Gold Hill. In 1874 the mine was reported to have a main building about 60 x 90 feet with a 40 x 60-foot boiler room, carpenter and blacksmith shops, a residence, office, other out buildings, and a three-compartment shaft. In 1979 Houston International Minerals Corp. explored the mine's old underground workings, but tests showed the ore to be marginal and the workings to be dangerous and too costly to bring up to proper safety levels, so the project was abandoned (Comp, 1980; Directory of Nevada Mine Operations Active During Calendar Year 1980, 65; M & SP, 1874, v.29, Oct. 24, 258; John S. Miller, HIMCO Nevada Operation's Public Affairs Manager, 1982, personal commun.).

Trojan Mine: The Trojan claim was the result of the consolidation of several lower Gold Hill precious metal claims originally located in 1859. The Baltic Co. worked the property in the early 1860s. In 1863 the Uncle Sam Co. bought out the Baltic Co. Operations were suspended during the mid-1860s, and in 1867 a three-compartment shaft was begun. Steady production was experienced in the early 1870s. Upon depletion of the ore, the mine shut down, and its equipment was moved to the Baltimore Mine. In the mid-1870s the original claims became delinquent and were relocated as the Trojan claim. Recorded production for 1877-79 was approximately 13,000 tons, yielding about $144,000 for an average of slightly over $11 per ton. Assessments totalled about $325,000 (Smith, 1943, 293; WPA, 1941, No. 50, 1-2).

North American Mine: In 1863 this property was reported in the *Gold Hill News* to be a 4,100-foot claim lying south of and on a line with the Uncle Sam claim in lower Gold Hill. It was located in the winter of 1859-60 and by 1863 had four shafts. In 1866 the mine was reported to have a 2,000-foot claim and to be shut down (GHN, 1863, Dec. 24, 3:1, SMR, 1866, 81).

Chapter 8

GOLD HILL AREA MILLS

Gold Hill's reputation as a milling center was eclipsed only by that of its famous mines. The town of Gold Hill and the canyon below were literally lined with stamp mills. Among the area's early day largest mills were the Atlas; Empire; Imperial; Pacific; Petaluma; Piute; Rhode Island; and Stewart, Kirkpatrick & Co.'s, all located in Gold Canyon below Gold Hill. The extensive Sutro Tunnel Coalition Mill, better known as the Crown Point Mill, was built in Gold Hill in the 1930s. Gold Hill's mills are described first, followed by a discussion of the mills located in Gold Canyon between Gold Hill and the Silver City District.

Eclipse Mill: Reduction facilty, owned by the Eclipse Mill & Mining Co., which was built in upper Gold Hill in 1860. In 1865 the *Gold Hill News* reported that it had a 50 horsepower engine; used 4 cords of wood a day; had 15 stamps, 8 Hepburn pans, and a 20-ton-a-day capacity; and employed 10 men. In 1866 its capacity was reported to be 25 tons a day (Collins, 1864-65, 249; GHN, 1865, June 27, 3:2; Kelly, 1862, 173; SMR, 1866, 148).

Derricks Mill: In 1860 this mill was reported to have been transported over the Sierras to the Comstock from Oregon Gulch in Butte County, California where it was known as the White & Nutter Mill. In Kelly's 1862 directory it was described as an 8-stamp mill with a 16 ton-a-day capacity located near Gold Hill. The mill was named for F. Derrick, who was superintendent and one of the owners of the mill. It was also known as the Clark & Derrick Mill (Kelly, 1862, 173; 1863, 309; TE, 1861, July 20, 2:4).

Thistle Mill: "Sandy" and "Eilley" Bowers built this mill in Gold Hill in the early 1860s to process ore from their rich mining claim in Crown Point Ravine. Kelly's 1863 directory reported that its main building measured 44 x 183 feet. In 1865 the *Gold Hill News* described the mill to be a 20-stamp mill with a 65 horsepower steam engine using 5 1/2 cords of wood a day; it had 30 Knox pans in the amalgamating department, a capacity of 22 tons per day, and 14 employees. Mrs. Bowers was born in Scotland and is reported to have given the mill its Scotch name; it was also known as the Bowers Mill (for more information on the Bowers, see the entry on the Bowers Mine in Chapter 7). The mill was badly damaged by a flood in 1868 and was destroyed by fire in 1869 (Bancroft, 1862, map; GHN, 1865, June 27, 3:2; Kelly, 1863, 310-11; TE, 1869, June 18, 3:1; Virginia City Times, 1958, vol. 1, no. 1,4).

Sutro Tunnel Coalition Mill: Large mill built in the mid-1930s by the Sutro Tunnel Coalition Co. to treat Crown Point Mine ore that lay beneath and next to the landmark Virginia & Truckee Railroad trestle in Gold Hill (in order to access the ore, it was necessary to reroute the railroad and dismantle the famous trestle). The mill is located south of the Gold Hill Hotel in Gold Hill. The all-slime cyanide plant was built with funds from the first mining loan granted by the Reconstruction Finance Corp. The mill had a 90 percent recovery rate, and in the first three years milled approximately 115,000 tons for a recovery of about $708,000. In this three-year period the RFC loan was completely paid off. Through the early 1940s an estimated 325,000 tons were milled for a recovery of approximately $2,000,000. The mill is locally known as the Crown Point Mill. Its several buildings remain intact, and it has been operated as a tourist mill (Stoddard, 1950, 36-38).

Crown Point Mill: Crown Point Gold & Silver Mining Co. mill was built in 1861 at the mouth of Crown Point Ravine. Kelly's 1862 directory reported it to have a main building measuring 70 x 140 feet. In 1865 the *Gold Hill News* described it as an 8-stamp mill with a

35 horsepower steam engine using 3 1/2 cords of wood per day; it had 14 pans in the amalgamating department, a capacity of 8 1/2 tons a day, and 8 employees (Bancroft, 1862, map; GHN, 1865, June 27, 3:2; Kelly, 1862, 72; SMR, 1866, 148).

Sunderland Mill: In the early 1870s this 10-stamp mill had a capacity of 15 tons a day and was milling ore from the Belcher Mine. It was located on the east side of Main Street in Gold Hill immediately south of the Crown Point Mine. According to Myron Angel, in 1875 it was owned by the Union Mill & Mining Co., of which William Sharon was president (Angel, 1881, 594; Sanborn-Perris Map Co., 1877, sh. 11; SMR, 1871-72, 138).

Granite Mill: In 1863 the *Gold Hill News* wrote that this was the only mill in Nevada Territory built of granite and considered to be fireproof. It was erected in 1861 in Gold Hill. In 1862 Kelly's directory reported that its main building measured 43 x 86 feet and that it possessed 20 stamps which could crush 25 tons per day. In 1865 the *Gold Hill News* described it as having a 45 horsepower steam engine using 4 1/2 cords of wood per day, 16 stamps, 8 Wheeler pans, a 28-ton-per-day capacity, and 10 employees. In 1867 it was refurbished, and in 1870 its machinery was moved to White Pine County, Nevada (GHN, 1863, Dec. 17, 3:1; 1865, June 27, 3:2; Kelly, 1862, 172; SCR, Locations, 1863, v.A, 171, sketch map; TE, 1867, Jan. 12, 3:1; 1870, Feb. 19, 3:2).

Comet Mill: West Gold Hill reduction facility reported in 1865 to have a 45 horsepower steam engine using 5 cords of wood per day, 16 stamps, 32 Brevoort pans, a 20-ton-per-day capacity, and 11 employees. The 1866 *State Mineralogist's Report* listed the same number of stamps and capacity. The mill was dismantled in 1868 (GHN, 1865, June 27, 3:2; SMR, 1866, 148; TE, 1868, Oct. 7, 3:1).

Gold Hill Mill: The Gold Hill Mining Co. built this mill in Gold Hill in 1861. Its main building measured about 35 x 74 feet. In 1865 it was reported to be a 14-stamp mill with a 36 horsepower engine using 3 cords of wood a day, 24 amalgamators, an 18-ton-a-day capacity, and 13 employees. In the early 1870s it had only 8 stamps and was reported to be inactive because of lack of wood. It was dismantled in 1875 (Bancroft, 1862, map; GHN, 1865, June 27, 3:2; Kelly, 1862, 171; SMR, 1871-72, 138; TE, 1875, Apr. 9, 3:1).

Coover & Stevenson Mill: This mill had the distinction of being one of the first steam mills to be erected on the Comstock. It was located on Main Street in lower Gold Hill and was reported to have started operations in August 1860. Some accounts list it as being the first steam mill on the Comstock, but it appears to have opened on the same day as Almarin B. Paul's Pioneer Mill near Devils Gate in the Silver City District. Originally the facility was known as the Coover & Harris Mill for its proprietors, Charles S. Coover and Dr. E.B. Harris. At that time it processed ore from the Bowers and Plato mines and had 8 stamps with a capacity of 6 tons per day. Later the mill was sold to C.C. Stevenson. In 1865 the *Gold Hill News* wrote that it was located below the Gold Hill Mill and had a 12 horsepower engine using 2 1/4 cords of wood per day, 8 stamps, 12 pans, a capacity of 6 tons per day, and 6 employees. In 1866 its capacity was reported to have increased to 10 tons per day. When the facility stood in the way of widening Main Street, it was torn down, and the machinery was moved to eastern Nevada. It was sometimes referred to as the Pioneer Mill (Angel, 1881, 68; Bancroft, 1862, map; Comstock Paper No. 15, M & SP, 1877, v. 34, Feb. 3, 73; GHN, 1865, June 27, 3:2; Kelly, 1862, 170; SMR, 1866, 148).

Overman Mill: The sheet-metal exterior of this 500-ton-a-day cyanide plant, which operated in the late 1930s and early 1940s, stands on the east side of what was in the early 1980s the Houston International Minerals Corp.'s access road between Gold Hill and American Flat. The mill was built and operated by the Consolidated Chollar, Gould & Savage Mining Co. (Stoddard, 1950, 38-39).

Union Mill: This quartz mill was erected in 1861 in lower Gold Hill. In Kelly's 1862 directory it was reported to be owned by the Crown Point Mining Co. and to have a main building measuring 20 x 40 feet, 8 stamps, and a crushing capacity of 10 tons a day. The 1866 *State Mineralogist's Report* listed it as a steam mill using 2 1/2 cords of wood a day and having 14 stamps, 14 pans, and a 14-ton-a-day capacity (Kelly, 1862, 172; SMR, 1866, 149).

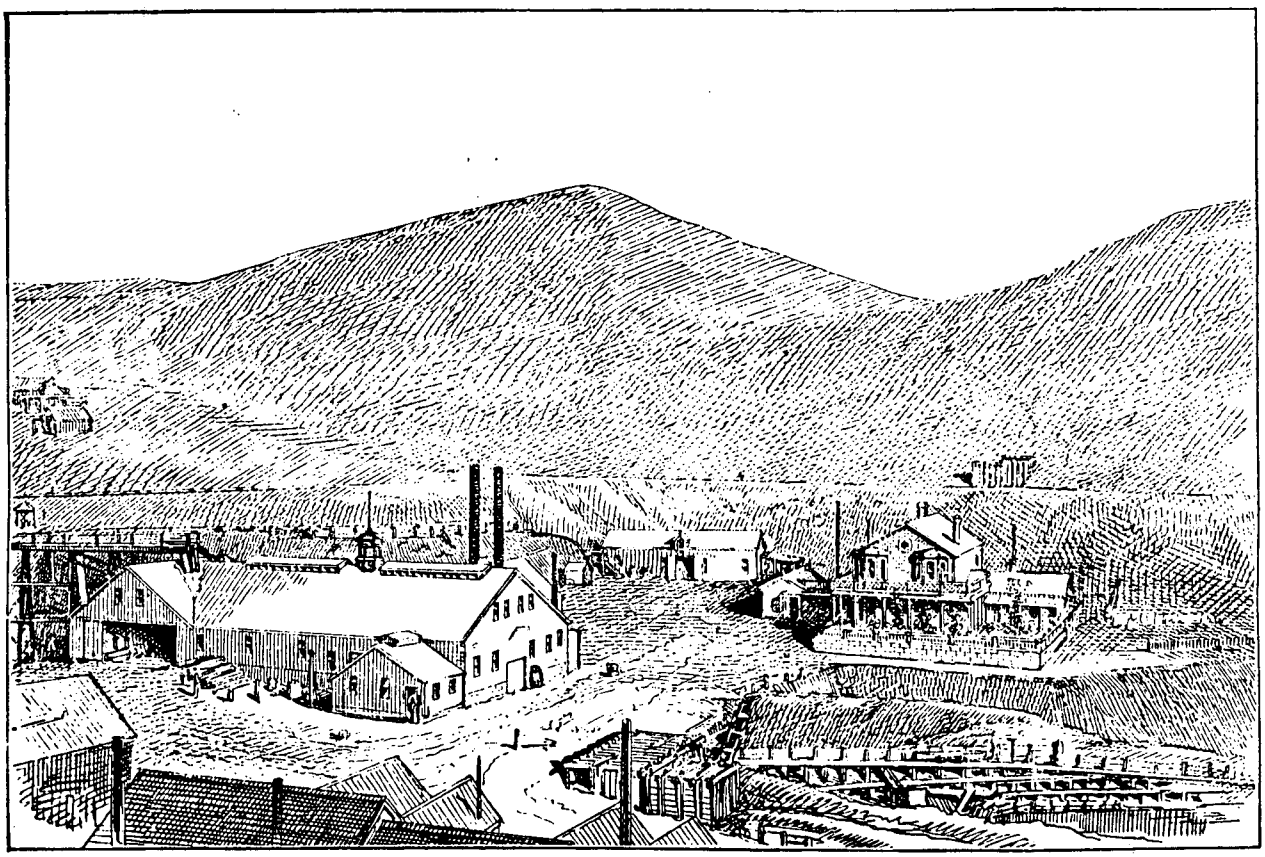
Stewart, Kirkpatrick & Co.'s Mill: Sizeable stamp mill built in the early 1860s in Gold Canyon about 1/2 mile below Gold Hill. In Kelly's 1863 directory it was described as having a main building measuring 50 x 120 feet, about 18 stamps, and a reduction capacity of 25 tons a day. Kelly wrote that "as a matter of locality, convenience, and desirability, this establishment is unsurpassed by any mill in the Territory, and but few exceed it in capacity." In an 1864-65 directory, Collins described it as one of the largest mills in the territory. William M. Stewart, famous Comstock mining lawyer later to become United States Senator from Nevada, was one of the owners of this mill (Bancroft, 1862, map; Collins, 1864-65, 250; Kelly, 1863, 312; TE, 1863, Jan. 10, 1:7).

Imperial Mill: Lower Gold Hill milling facility erected in 1860 at a cost of almost $200,000. It was originally known as the Washoe Gold & Silver Mining Co.'s Mill; later it was owned by the Imperial Mining Co. It appears to be the same mill as described by Kelly in 1863 as the Nevada Mill. In 1864 the *Gold Hill News* described it as one of the largest in the Territory with a main structure measuring 75 x 130 feet. At about the same time Collins wrote that it was "classed among the finest in the District." In 1865 it was reported to have a 45 horsepower engine consuming 6 1/2 cords of wood a day, 44 stamps, 74 pans, a 30-ton-a-day capacity, and 20 employees (Bancroft, 1862, map; Collins, 1864-65, 248; GHN, 1864, Jan. 5, 3:1, 1865, June 27, 3:2; Kelly, 1862, 171; 1863, 310; SMR, 1866, 148).

Rhode Island Mill: Important reduction facility whose ruins are marked by an historical marker on the east side of Nevada State Route 342 in lower Gold Hill. It was built in 1862, had a main building measuring about 53 x 100 feet, and was described in Kelly's 1863 directory as being one of the most substantial mills in the Nevada Territory. In the 1866 *State Mineralogist's Report* it was described as a steam mill running on 8 cords of wood per day and having 25 stamps, 13 Knox pans, 8 Hepburn pans, and a capacity of 40 tons a day. In the early 1870s it was reported to be running on ore from the Crown Point Mine and had 25 stamps with a 50-ton-per-day capacity. The mill was reported to still be in operation in the 1880s. Some foundations remain at the site (Comp, 1980; Kelly, 1863, 311; SMR, 1866, 148; 1871-72, 138; SCR, Locations, 1865, v.A, 380-81, sketch map).

Empire Mill: This large reduction facility was located below Gold Hill between the Rhode Island and Piute mills. It was owned by the Empire Mining Co. and was erected in 1861. In 1864 the *Gold Hill News* described it as having a 60 horsepower engine using 5 cords of wood a day, 16 common stamps and 2 very large stamps, 50 pans, and a capacity of 135 tons per week. Collins described it as "one of the most extensive Quartz Mills in Gold Hill." In the 1866 *State Mineralogist's Report* it was listed as having 16 stamps and a capacity of 32 tons per day (Collins, 1864-65, 248; GHN, 1864, Jan. 6, 3:1; SMR, 1866, 148).

Sapphire Mill: Milling facility erected in the early 1860s about 1/4 mile below Gold Hill. It was earlier known as J.B. Gagnon & Co.'s Mill and in 1864 was reported by the *Gold Hills News* to be one of the best mills in Gold Canyon. Kelly's 1863 directory listed its main building to measure 58 x 61 feet. In 1865 it was described by the *Gold Hill News* as having a 40 horsepower engine running on 4 cords of wood a day, 16 stamps, 40 pans, a capacity of



RHODE ISLAND, GOLD HILL.

Rhode Island Mill (De Quille, p. 223).

20 tons, and 12 employees. In the early 1870s it was listed as having 15 stamps and a 40-ton-a-day capacity and running on ore from the Crown Point Mine. It was reported to still be operating in the early 1880s (Comp, 1980; GHN, 1864, Apr. 5, 3:1; 1865, June 27, 3:2; Kelly, 1862, 173; 1863, 311; Lord, 1883, pl. 3; SMR, 1871-72, 138).

Petaluma Mill: Sizeable mill constructed in 1862 in Gold Canyon west of Twin Peaks. It stood adjacent to the Sapphire Mill. In 1865 the *Gold Hill News* described it as having a 20 horsepower steam engine using 2 3/8 cords of wood per day, 8 stamps, 18 pans, a 12-ton-a-day capacity, and 8 employees. In the 1866 *State Mineralogist's Report* it was reported to have expanded to 16 stamps and a capacity of 26 tons per day. In the early 1870s it was milling ore from the Crown Point Mine and had 24 stamps with a 75-ton-per-day capacity. It was reported to have shut down in the mid-1870s. Some sources indicate that it was dismantled and moved to Bodie, California in 1880 whereas other sources report that the mill remained on the Comstock and operated during the 1880s (Comp, 1980; GHN, 1865, June 27, 3:2; Kelly, 1863, 311; Lord, 1883, pl. 3; SMR, 1866, 148; 1871-72, 138).

Gerard, Fourcherie & Co. Mill: This mill received a lot of publicity because it was constructed on a different principle from any mill in the state. It was erected in 1865 near the Sapphire Mill. No stamps were used, but instead it employed a crusher capable of grinding rocks the size they were when taken from the mine. It was heralded as being much less expensive to operate than stamp mills of the same capacity. In fact, it was supposed to be so efficient that only seven men were required to process 40 tons a day. The mill was housed in a three story building. No further mention of the mill was found after 1865 (GHN, 1865, Aug. 19, 3:2; 1865, Oct. 4, 2:4).

Douglas Mill: Originally known as the Centerville Mill, this mill was built in the early 1860s about 1/2 mile below Gold Hill. In 1862 its main building was reported to measure 52 x 60 feet. The *Gold Hill News* in 1865 described it as having a 24 horsepower engine using 4 cords of wood per day, 10 stamps, 24 pans, a 15-ton-a-day capacity, and 10 employees. In the early 1870s it was listed as having 15 stamps and a capacity of 30 tons a day. At that time it was running on ore from the Empire and Gold Hill mines. The mill may have been operating as late as the late 1880s. Stone foundations remain (Bancroft, 1862, map; Comp, 1980; GHN, 1865, June 27, 3:2; Kelly, 1862, 172; SMR, 1871-72, 138).

Atlas Mill: Sizeable reduction establishment which was located due southeast of the Caledonia New Hoisting Works at a point approximately 3/4 mile below Gold Hill. In 1865 it was reported to be a 15-stamp mill owned by Seale and Anderson possessing a 45 horsepower engine running on 5 cords of wood per day, 8 amalgamating pans, 11 employees, and a capacity of 26 tons in 24 hours. In the early 1870s it had 15 stamps, could crush 45 tons a day, and was milling ore from the Savage Mine. It appears that this mill was earlier known as the Seales & Anderson Mill, which was a 5-stamp mill built in 1862 (Collins, 1864-65, 247; GHN, 1864, Sept. 30, 3:2; 1865, June 27, 3:2; SMR, 1866, 148; 1871-72, 138; SCR, Mining Locations, 1876, v.B, 493, sketch map).

Piute Mill: Twenty-stamp mill built in 1864 approximately 3/4 mile below Gold Hill to process ore from the Piute claim in Gold Hill. In 1865 it had an 80 horsepower steam engine running on 5 cords of wood a day, 10 Hepburn pans for amalgamation, a 30-ton-a-day capacity, and 11 employees. In the early 1870s its capacity was reported to be 50 tons a day, but it was not operating (GHN, 1864, Sept. 30, 3:2; 1865, June 27, 3:3; Parkinson, 1874, map; SMR, 1871-72, 138).

Papoose Mill: Small quartz mill located adjacent to the Piute Mill in Gold Canyon below Gold Hill. In the 1871-72 *State Mineralogist's Report* it was listed a 5-stamp mill with a 14-ton-a-day capacity (Parkinson, 1874, map; SMR, 1871-72, 138).

Marysville Mill: Was built in 1861 about 3/4 mile below Gold Hill. According to Kelly's 1862 directory, its main building measured 55 x 70 feet, and it had 18 stamps with a 36-ton-per-day capacity. In 1865 it was described as having 9 stamps, 30 pans, a 35 horsepower engine consuming 4 cords of wood a day, a capacity of 20 tons a day, and 12 employees. The 1866 *State Mineralogist's Report* lists its capacity as 18 tons per day (Collins, 1864-65, 249; Kelly, 1862, 171; GHN, 1865, June 27, 3:2; SMR, 1866, 148).

Pacific Mill: Large milling establishment located in Gold Canyon approximately 3/4 mile northwest of Devils Gate, which was built in 1864 by Land, Skae, & Co. In 1865 the *Gold Hill News* reported its main building to measure 72 x 100 feet. At that time it had a 120 horsepower engine consuming 9 cords of wood per day, 30 stamps, 15 Wheeler pans, a 50-ton-per-day capacity, and 20 employees, making it the largest mill in the district. In the early 1870s it was milling Belcher Mine ore and was listed as having 30 stamps with a capacity of 70 tons a day. According to Myron Angel, in 1875 the mill was owned by the Union Mill & Mining Co., of which William Sharon was president (Angel, 1881, 594; GHN, 1865, Jan. 12, 3:1; 1865, June 27, 3:3; Lord, 1883, pl. 3; SMR, 1871-72, 138).

Bancroft's 1862 map showed the **McClellan and Staples mills** as being located in Gold Hill. No other information was found on these mills. Among some of the smaller mills located in Gold Canyon below Gold Hill were the Greeley & Co., the Ione, and the Pony mills. In 1873 the *Territorial Enterprise* reported the **Greeley & Co. Mill** to be a new tailings mill situated in lower Gold Hill. At that time it had one pan and processed 36 tons of tailings a day. First mention of the **Ione Mill** was found in the *Territorial Enterprise* in 1869 when the facility was reported to be located in lower Gold Hill and to have been purchased by the owners of the Twin Mine to process ore from that mine. In the 1871-72 *State Mineralogist's Report* it was listed as a 5-stamp mill running on ore from the Crown Point Mine and having a capacity of 15 tons a day. In 1875 the *Territorial Enterprise* described the **Pony Mill** as located in lower Gold Hill and having a capacity of 3 tons in 24 hours. The article went on to say that the facility was a place where the small operator could get ore speedily and honestly processed (TE, 1869, Mar. 2, 3:2; 1873, June 8, 3:2; 1875, Mar. 14, 3:1).

Chapter 9

THE MINES AND MILLS OF THE AMERICAN FLAT AREA

The Setting: American Flat and American City

American Flat is the name given to a relatively level area, measuring approximately one mile long by one mile wide, situated about 1/4 mile west of Gold Canyon between Gold Hill and Silver City. Gold and silver mining began here after 1860 when the Comstock discoveries extended beyond Gold Canyon. Carlson writes that Emanuel Penrod, an early Comstock miner and Nevada pioneer, reported that the large flat was named "American" because it was mined by Americans rather than the Mexicans or Chinese, who were active in mining in the Gold Canyon area in the early days.

American City was a mining camp situated in northeast American Flat west of Hartford Hill. It was laid out in 1864 on an extension of the Comstock Lode. Its post office is reported to have operated from March 1866 to February 1868. Collin's 1864-65 directory reported the camp to resemble an old established city. In the mid-1860s the town offered the state a donation of $50,000 to have the capital moved from Carson City to American City. The offer was declined despite support from the Storey County newspapers. Nothing remains of the settlement but a trace of rubble. Close by the site are the extensive ruins of the United Comstock Merger Mill built there in 1921. In the early 1920s the town of Comstock was built on the site of American City to serve the United Comstock Merger Mill. Comstock's post office operated from January 1923 to February 1927. The community's demise coincided with that of the massive mill (Carlson, 1974, 37, 84; Collins, 1864-65, 339; GHN, 1864, Jan. 13, 3:1; Harris, 1973, 10, 18; Lincoln, 1923, 229; Moran, 1923, map; Mordy & McCaughey, 1968, 180; Paher, 1970, 31; SCR, Locations, 1864, v.A 314, plat of American City).

The American Flat District

This silver and gold mining district was established on American Flat in 1864 when it was segregated from the Gold Hill District. The settlement of American City came into existence to serve the district. District mines included the Globe Consolidated, Baltimore Consolidated, Maryland, American Flat, and Rock Island. The district is now part of the Comstock District (Angel, 1881, 616; GHN, 1864, Apr, 2, 3:1; SMR, 1866, 69).

Globe Consolidated Mine: This claim was located in 1859 and first worked in the 1860s when some low-grade silver-gold ore was discovered. The property was located on the northwest fringes of American Flat. Operations were suspended in the late 1860s because of flooding of the lower levels of the mine and a general depression in Comstock mining. In the early 1860s the adjoining Arizona, Jure, and Utah claims were acquired to form the Globe Consolidated Co. The quality and quantity of ore produced was reported to be erratic and negligible (Angel, 1881, 616; WPA, no. 19, 1-2).

Rock Island Mine: Precious metal mine located on the west side of American Flat. The claim was staked in 1860, and in 1865 the *Gold Hill News* described it in terms of feet as one of the largest in the district with approximately 3000 feet. There was no reported production, and assessments totalled about $480,000.

A proposed town by the name of Rock Island was surveyed by Ross E. Browne on November 25, 1874. It was to be located at the northwest corner of American Flat due north of the Rock Island Mine. A plat of the proposed community is on file in the Storey County Recorder's Office. Apparently the town was never established as no further mention of it can be found (GHN, 1865, Jan. 10, 3:1; Smith, 1943, 293; SCR, Mining Locations, 1875, v.B, 237).

Baltimore Consolidated Mine: Mining property located at the north end of American Flat about one mile southwest of Gold Hill. The original claim included approximately 1,200 feet on the American Flat Branch of the Comstock Lode. Work on the property commenced in 1862, and a three-compartment shaft was started in the mid-1860s. The ore bodies were small and soon exhausted; the mine closed in the late 1880s. There was no reported production, and assessments of about $1,015,000 were made (Becker, 1882, 21; Church, 1879, 1; Smith, 1943, 293; WPA, 1941, no. 5, 1).

In 1881 Myron Angel listed the **American Flat** and **Maryland** mines as minor producers located on American Flat. The **Tyler Mine** is situated above the northwest fringes of American Flat due west of the Baltimore Mine. The **Delaware Mine** is located to the west of American Flat at approximately 6,600 feet elevation on the northeast flank of McClellan Peak. In 1979 the **Arizona Utah Mine** was listed as an active gold-silver mine operating in the vicinity of American Flat (Angel, 1881, 616-17; Directory of Nevada Mine Operations Active During Calendar Year 1979, 57).

The American Flat Mills

Even though American Flat's mines have produced little, the area was the site of a massive mill operation in the 1920s, that of the United Comstock Merger Mill, and more recently the site of Houston International Minerals Corp.'s huge American Flat Mill. These two major mills will be described first, followed by a discussion of the area's smaller mills.

American Flat Mill: Houston's International Minerals Corp.'s Comstock Operation's office was located on American Flat, along with its mill and tailings pond. HIMCO began its Comstock precious metal mining activities in the late 1970s. The operations included the underground exploration of the New York Mine in lower Gold Hill and open pit mining of gold and silver at the Con Imperial Pit in upper Gold Hill, which were covered in Chapter 7. A large sodium-cyanide mill, which processed ore from all of HIMCO's Comstock Operations, is located on American Flat. The mill, which went into operation in the spring of 1980, dominates the north end of the flat. It used the sodium cyanide process in which water and cyanide function in a closed circuit, recycling both. In March 1982 the mill was in full operation; 113 were employed at its peak. Much of the company's mineral properties were located on American Flat. The mill, which was designed to be dismantled, cost HIMCO $17,000,000 to construct. The United Mining Co. purchased the mill and other HIMCO properties for $10,000,000. United had the mill up for sale in 1986 after its New Savage Mine stopped production in April 1985 (John S. Miller, HIMCO Nevada Operation's Public Affairs Manager, 1982, personal commun.; Reno Gazette-Journal, 1986, Jan. 18, 8B).

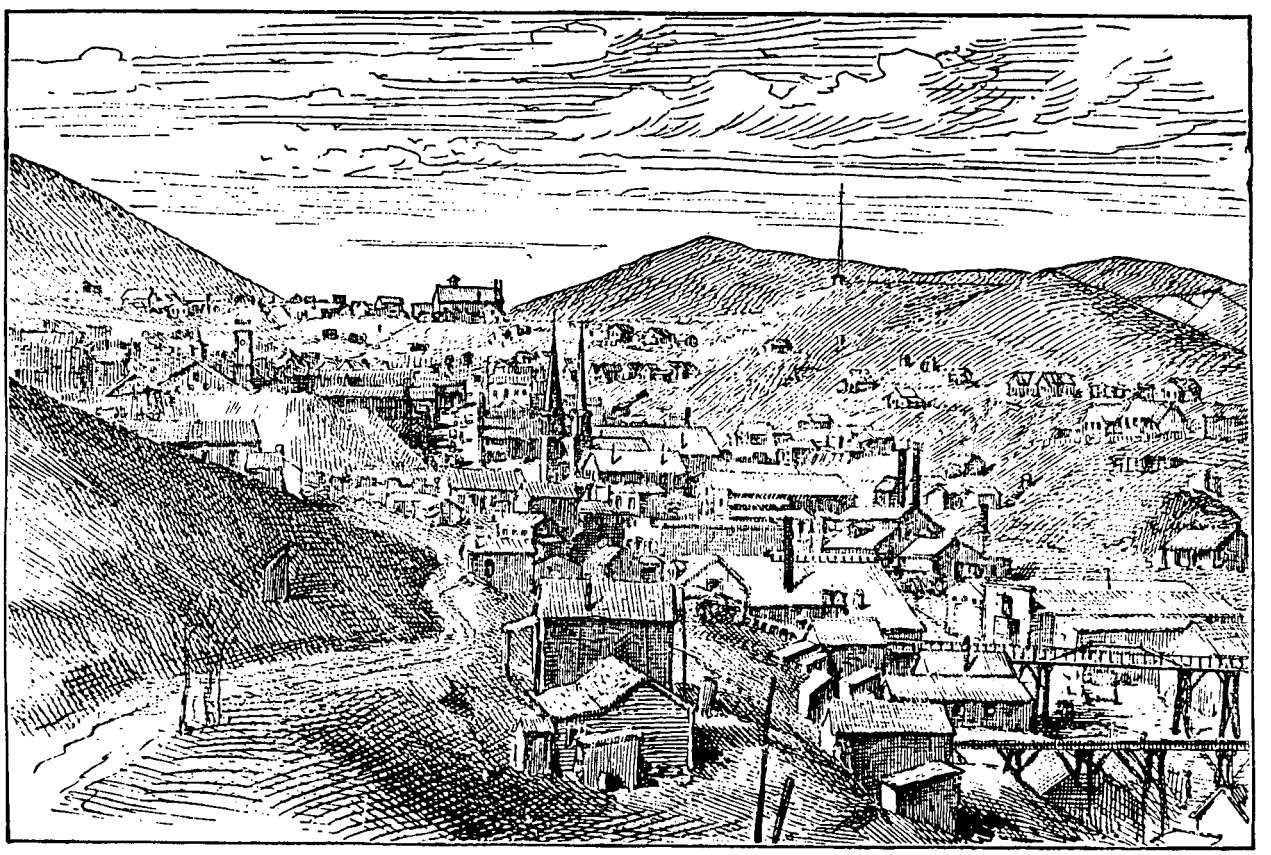
United Comstock Merger Mill: Extensive cyanide mill located on American Flat approximately 1 1/4 miles northwest of Silver City. In 1919 two Nevada engineers purchased several old mining properties in the Gold Hill vicinity and organized the United Comstock Mines Co. A second corporation owned by the same men, the Comstock Merger Mines Co., operated in Virginia City. These companies found millions of tons of low-grade ore and built the United Comstock Merger Mill to process it. Ground for the facility was broken in 1921, and the mill went into operation in 1922. At that time it was the largest cyanide mill in the western states, having a 2,000-ton-a-day capacity. It had an ore-receiving and

coarse-crushing unit, a fine-grinding and concentration unit, a cyanide and thickening division, a precipitation and refining unit, warehouse and storage yard, assaying and experimental unit, and repair shops. A settlement by the name of Comstock grew up close to the mill. Approximately 2,000,000 tons were treated with a recovery of only about $4 per ton. Because of falling silver prices, the mill was abandoned in 1926. Alternate names include the American Flat Mill and the Consolidated Comstock Mill. Concrete walls and foundations remain at the site (Engineering & Mining Journal, 1922, vol. 114, Nov. 11, 846-53; Glass, 1975, 15-16; Stoddard, 1950, 27-28).

Bay State Mill: In 1865 this quartz mill was reported by the *Gold Hill News* to be located in American City, to have a main building measuring 50 x 100 feet, to possess 23 stamps, and to be the "finest in the State of its capacity." In the 1866 *State Mineralogist's Report* it was listed as having the same number of stamps and a 35-ton-per-day capacity. It was destroyed by fire in 1871 (GHN, 1865, June 27, 3:1; SMR, 1866, 148; TE, 1871, Feb. 22, 3:1).

Rigbys Mill: The Rigby brothers built this mill in 1862 at the head of American Ravine. Its main building was listed as measuring 24 x 54 feet in Kelly's 1863 directory. Collin's 1864-65 directory reported that it had 10 stamps and could crush 14 tons a day. In the 1866 *State Mineralogist's Report* it was listed as a steam mill using 4 cords of wood a day and having 10 stamps, 5 Varney pans, and a capacity of 12 tons a day. In 1870 the *Territorial Enterprise* reported that the mill was moved from American Flat to Six Mile House, which was situated below Spring Valley in northwest Lyon County (Collins, 1864-65, 250; Kelly, 1863, 314; SMR, 1866, 148; SCR, Locations, 1864, v.A, 359, sketch map; TE, 1870, Sept. 13, 3:1).

The **American Flat Mill** (not to be confused with the United Comstock Merger Mill or the Houston International Minerals Corp.'s or the United Mining Co.'s American Flat Mill) was erected on American Flat in 1861. Kelly's 1863 directory reported that it was a ten-stamp mill which could crush 10 tons a day. **Reed & Wades Mill** was built in 1861 near the future site of American City. In 1864 it had 8 stamps and an 8-ton-a-day capacity. It was destroyed by fire in 1864. The **McClelland & Davis** and **Smith & Nettleton** mills were shown on Bancroft's 1862 map as being located on American Flat. In 1862 Kelly listed the former as having a capacity of 30 tons a day and the latter as a 10-stamp mill with a 15-ton-a-day capacity. The **Johnson Mill** was shown on an 1864 Storey County Records sketch map as located on American Flat Road near Rigbys Mill. In 1872 the *Territorial Enterprise* wrote that the **Soderlinge Mill** had begun operations on American Flat. It had 2 stamps, an amalgamating pan, and a 10-ton-a-day capacity (Collins, 1864-65, 249, 340; GHN, 1864, Oct. 10, 3:1; Kelly, 1862, 174; 1863, 314; SCR, Locations, v.A, 1864, 359; TE, 1872, Mar. 12, 3:2).



GOLD HILL—LOOKING NORTH.

Gold Hill (De Quille, facing p. 236).

Chapter 10

SILVER CITY AND THE MINES OF THE SILVER CITY DISTRICT

The Setting: Silver City

The town of Silver City is located in Gold Canyon on Nevada State Route 342 approximately four miles north of its junction with U.S. Highway 50 and about two miles below Gold Hill. The settlement came into existence in late 1859. Prior to that time Johntown, which was located about 1 1/2 miles below the site of Silver City in Gold Canyon, was the major mining camp in the area. Within a year Silver City had four hotels, ten stores, two drug stores, two butcher shops, three blacksmith shops and several residences. In the early days it rivaled Virginia City and Gold Hill with its mines but failed to develop any bonanzas, so it became a milling and transportation center instead. By 1861 Silver City had a population of about 1,200 and was serving as a main boarding place for animals used in hauling ore wagons to and from the Comstock. The settlement was the site of one of the first steam-powered quartz mills on the Comstock, Paul's Pioneer Mill, which went into operation in August 1860. After 1869 the community began to decline because the Virginia & Truckee Railroad, which bypassed Silver City to the west, took its extensive freighting business away. By the early 1870s the community had eight quartz mills with a total of 95 stamps and a population of about 1,500. In the 1930s Silver City again was the scene of considerable mining and milling activity. Today it is a peaceful residential community with a population of about 40 (Angel, 1881, 502; Browne, 1874, map; Paher, 1970, 69; SMR, 1871-72, 98).

Devils Gate

No discussion of the Silver City area would be complete without a brief description of the area's best known landmark, Devils Gate. The sinister name is descriptive of a portion of Gold Canyon, just above Silver City, where a rock formation causes the canyon walls to come close together, forming a natural gate. This landmark lies on the Storey-Lyon county line. In the early days it was reputed to be a hangout for bandits. In the early 1860s Andrew Marsh wrote the following description of the area: "It was dark before we reached this point (Devils Gate), and the scene impressed me as strangely weird and almost diabolical. All around was heard the clatter and thunder of quartz mills from each of which gleamed the furnace fires like the eyes of demon..." A small community by the name of Devils Gates was established in the area about late 1859. Paher writes that it was made up of a continuous line of tunnels, mills, water wheels, sluices, residences, saloons, stables, a hotel, brewery, barber shop, express office and toll house. Later it became part of Silver City (Marsh, 1972, 211; Paher, 1970, 31).

Johntown

The early mining camp of Johntown was located in Gold Canyon about 1 1/2 miles below the site of present-day Silver City. After the discovery of gold at the mouth of Gold Canyon, the camp was established in the early 1850s. For the rest of the decade a band of miners used primitive placer equipment to recover small amounts of gold. The canyon was worked only a few months of the year when enough water was available. Many Chinese worked the diggings, working gravel that had been abandoned by the whites. The camp is reported to have been named for the presence of "John Chinamen." The *Gold Canyon Switch*, a small handwritten newspaper, made its appearance in Johntown in the mid-1850s. From 1857 to February 1859 Johntown was the main mining camp of western Utah Territory

with up to 180 inhabitants in the summer months. The Comstock discovery began from Johntown when in early 1859 James Finney and some other local miners ventured up Gold Canyon and made the Gold Hill discovery. After the Comstock discovery, the camp was abandoned for richer diggings in Gold Hill and Virginia City. Stone ruins and an historical marker on Nevada State Route 341 mark the site (Paher, 1970, 69).

The Columbia Quartz District

While Johntown was still thriving, this short-lived gold mining district was established in 1858 by some Gold Canyon miners in a meeting held at Johntown. Eliot Lord reported it to be the first mining district to be established on the eastern slope of the Sierra north of the Mexican border. The district extended from the mouth of Sixmile Canyon up to the Carson River to the mouth of Clear Creek on the Carson River, north to the edge of Washoe Valley and east to opposite the east branch of Sixmile Canyon to the starting point. Shortly after the district was founded, its regulations were forgotten or only vaguely remembered, perhaps because there were no provisions for the enforcement of its bylaws (Lord, 1883, 33-35; Old Carson County Miscellaneous, 1858, v.E, 82-83).

A Tale of Two Brothers

An account of the Silver City area would not be complete without mention of the Grosh brothers. Most reports concur that Ethan Allen Grosh (1824-1857) and Hosea Ballou Grosh (1826-1857) were the first to intelligently prospect the Comstock area for silver. The other early prospectors worked the area around Gold Canyon for placer gold, but the Grosh brothers were reported to have lived in a stone cabin in American Ravine near the present site of Silver City where they were studying ore veins for their silver potential. The brothers were the sons of a Universalist clergyman from Pennsylvania and had some knowledge of mineralogy and chemistry. They arrived in California from Pennsylvania in the early 1850s where they prospected in El Dorado County before moving to the Gold Canyon area in the mid-1850s, where they were reported to have been quiet and to have kept to themselves. In 1856 they wrote their father that they had found a massive vein of silver near Gold Canyon. In about August 1857 Allen wrote his father that one of their samples assayed for $200 of silver per ton and another for $3,500 per ton. A few days later tragedy struck when Hosea accidentally stuck a pick into his foot, causing a very deep and painful wound; he died of gangrene in early September. Allen was devastated by his brother's death but continued working to pay off the debts incurred by Hosea's illness and burial, delaying his planned departure for California until mid-November. He and a traveling companion encountered two fierce snowstorms crossing the Sierra and nearly perished before reaching the mining camp of Last Chance, California badly frost bitten. The companion survived, but Allen died a few days later, taking the secret of the exact location of his silver discovery with him. It is generally agreed that the Grosh brothers were working in the area of American Ravine closer to the Silver City Branch of the Comstock Lode rather than on the main branch of the Lode. For this reason they are given credit for foreseeing the silver potential of the area rather than for the actual discovery of the Comstock Lode (Comstock Paper No. 1, M & SP, 1876, v.33, July 22, 64-65; Gianella, 1936, 21; Lord, 1883, 24-32).

The Silver City District

This mining district is the oldest in Lyon County and one of the oldest in the state. It contains the silver vein discovered by the Grosh brothers in the mid-1850s and has been an almost continuous producer of gold and silver since 1850. The district is a rectangular area measuring approximately 3 1/2 x 4 miles in western Lyon County and southern Storey County northwest of Dayton. Silver City is located almost in the center of the district. The district includes the southern continuation of the Comstock Lode, which is referred to

as the Silver City Branch of the Comstock Lode. Because of its close relationship, the district's production is difficult to separate from that of the Comstock District. Estimated production through 1943 was $13,984,000.

Most of the district's production has been from ores within 300 feet of the surface. Unlike the rest of the Comstock District, the value of gold production has greatly exceeded that of silver in the Silver City District. Two of the district's most productive mines are the Dayton and the Daney, which will be described later in this chapter. Large scale dredging was conducted in the district in the 1920s and early 1940s. In the 1930s this was one of the most active districts in the state, with many of the old mines such as the Hartford, Woodville, Dayton, Silver Hill, and Overland reopening. Alternate names for the district include Chinatown, Dayton, Devils Gate, and Gold Canyon. The district now is part of the Comstock District (Gianella, 1936, 1-24; Moore & Archibald, 1969, 25; SMR, 1866, 26).

The Silver City District mines will be covered in the approximate order of their position on the Silver City Branch of the Comstock Lode, from north to south.

Keystone Mine: Located in Gold Canyon about one mile northwest of Devils Gate. "The Keystone claim covers the first outcropping of the Silver City Branch below the main Comstock Lode. In the early days it was developed by a tunnel, an inclined shaft with levels to 270 feet, and a 400-foot vertical shaft. The ore developed was too low grade for stoping, but with the increased price of gold Mr. Bob Montgomery in 1934, operating as the Comstock Keystone Mining Co., optioned the claim and made profitable shipments to custom mills, with a recorded production through 1939 of $146,414 from 15,074 tons." (Stoddard, 1950, 43).

Alta Mine: Located about one mile southeast of Gold Hill on the Silver City Branch of the Comstock Lode. The claim was staked in 1859, but not much work was done until the mid-1870s when good ore was found close by in the Woodville Mine. The Alta Shaft was part of a "third line" of vertical shafts sunk in the mid-1870s to tap the Comstock Lode at greater depths. Total reported production for the years 1879-1890 was about $403,000 from an estimated 24,000 tons for an average of slightly less than $17 per ton. According to Stuart, assessments of approximately $3,618,000 were levied, and no dividends were paid. Smith lists an estimated production of $750,000 for the mine. In the mid-1920s the mine was taken over by the United Comstock Mining Co. and later by the Sutro Tunnel Coalition Co (Becker, 1882, 20; Smith, 1932, 21; Stoddard, 1950, 43; Stuart, 1909, 43, WPA, 1941, no. 2, 1-4).

Lady Washington Mine: Claim located on the Silver City Branch of the Comstock Lode north of Devils Gate between the New York and Alta mines. The mine was being worked in the mid-1870s. In the mid-1920s it was taken over by the United Comstock Mining Co. In 1950 Stoddard reported that the mine had no recorded production (Becker, 1882, 20; Comp, 1980; Stoddard, 1950, 43; TE, 1876, Aug. 12, 3:2).

Woodville Mine: Situated in Gold Canyon approximately 1/2 mile northwest of Devils Gate. In the 1873-74 *State Mineralogist's Report* it was reported to be yielding about 30 tons per day, which was enough to keep the company's ten-stamp mill constantly running. The mine's main period of activity was from 1872-1875. Up to 1882 it had reported production of approximately $121,000 from an estimated 7,000 tons for an average per ton a little under $17.50. Assessments of about $750,000 were levied (SMR, 1873-74, 144; Smith, 1943, 293).

Succor Mine: This mining property was located about 1/4 mile northeast of Devils Gate. The claim was staked in 1859 on the Silver City Branch of the Comstock Lode, north of the Silver Hill Mine and east of the Justice Mine. Operations were suspended from the mid-1860s to the early 1870s. In 1871 a three-compartment shaft was started. Total

reported production between 1871-1895 was about 18,000 tons, yielding approximately $201,000 for an average per ton of a little over $11. Dividends of about $22,000 were paid, the last of which was paid in 1872. Through 1881 assessments of approximately $798,000 were made (Lincoln, 1923, 226; Smith, 1943, 293; WPA, 1941, no. 48, 1).

Silver Hill Mine: Long-time producer located in Gold Canyon approximately 1/2 mile northwest of Devils Gate. The claim is composed of the original Silver Hill, Echo, St. Louis, Lucerne, and Waller's Defeat claims, which were located near the Justice and Hartford properties. All of these claims were staked in 1859 along the Silver City Branch of the Comstock Lode. In the early 1870s the Silver Hill Mining Co. was incorporated by John Mackay and James Fair, at which time the other four claims were acquired. Total reported production for the period 1873-1879 was about $140,000 from an estimated 13,000 tons for an average of a little under $11 per ton. The company was incorporated for 50 years, and its charter was renewed in the 1920s. Up to 1909 no dividends had been paid, and assessments of about $2,200,000 had been levied. As of 1950, a father and son team by the name of Donovan had successfully worked these claims over a 40-year period (Becker, 1882, 20; Stoddard, 1950, 41; Stuart, 1909, 42; WPA, 1941, no. 46, 1-3).

Overland Mine: Situated about 1/2 mile northeast of Silver City and approximately 1/4 mile west of Negro Ravine. From 1893-1936 the mine had a production of about $334,000 from an estimated 44,000 tons for an average per ton of slightly over $7.50. In 1937-38 it yielded approximately $232,000 from about 57,000 tons for an average of about $4 per ton. Production ceased with the advent of World War II by order of the War Production Board (Stoddard, 1950, 46).

Justice Mine: This 1,600-foot claim on the Silver City Branch of the Comstock Lode was staked in 1859. It is located at the north end of Hartford Hill about one mile northwest of Devils Gate. The Justice Shaft was part of a "third line" of vertical shafts sunk in the mid-1870s in an attempt to tap the Comstock Lode at great depths. Reported silver-gold production for 1875-1924 was about 206,000 tons, yielding approximately $3,931,000 for an average of about $19 per ton. Through 1908 assessments of about $3,667,000 were made, and no dividends were paid. In the mid-1930s the property was leased to the Dayton Consolidated Mines Co. (Becker, 1882, 20; Comp, 1980; Stuart, 1909, 42; WPA, 1941, no. 27, 1-5).

Buckeye Mine: Located on the Occidental Grade about 1/2 mile east of Silver City. The mine's main productive period during the Comstock era was 1867-1874. In the mid-1870s about 20 tons of ore per day were being extracted, keeping the company's mill constantly running. Through 1881 the mine had produced an estimated 12,000 tons, yielding approximately $178,000 for an average of almost $15 per ton. The mine's ore had a much higher gold than silver content. In the days of the Comstock, Silver City was being supplied with water from this mine. The mine was operated by Leo Johnson of Gold Hill from the late 1920s until the early 1950s (Reno Evening Gazette-Nevada State Journal, 1980, July 13, 62; SMR, 1873-74, 64-65, Smith, 1943, 293; TE, 1876, Aug. 12, 3:3).

Pedroli Mine: Earlier known as the Milk Ranch Mine, the Pedroli Mine was owned by S. J. Pedroli and M. Quilici and was located about 1/4 mile east of Silver City. Quilici was reported to have begun mining the property in the mid-1890s and to have extracted about $10,000 from the property in one 22-day period. The mine was operated regularly on a small scale from the mid-1890s into the 1930s (Smith, 1932, 18).

Donovan Property: Reported in 1950 to be a mining property located just above Devils Gate. For over 40 years part of the claims were owned by the Silver Hill Mining Co. and leased to William "Bill" M. Donovan and his son. The Donovans created the Donovan cut or

pit and from the early 1920s to 1950 extracted an estimated 200,000 tons, yielding about $1,200,000 for an average of $6 per ton. Operations were suspended from 1943-1948 by War Production Board Order L 208. According to Stoddard, this mine is an example of a low-profile, highly successful operation. The Donovans are no longer working the claims (Stoddard, 1950, 40-42).

Dayton Mine: The district's major producer is located due south of American Ravine and north of the Kossuth Mine. The original claim was made in 1859, but the mine's major productive period during the Comstock era was 1870-1875. In the mid-1870s it was reported to be extracting 55-61 tons daily, to have excavated to 320 feet beneath the surface, and to employ 80-100 men. Through 1881 the mine was reported to have produced an estimated 15,000 tons, yielding approximately $340,000 for an average per ton of almost $23; assessments of about $859,000 were made. The mine was idle from about 1880-1932 when the high price of gold made profitable the mining of its near-surface ore. Dayton Consolidated Mines Co. milled an estimated 185,000 tons yielding approximately $1,791,000 for an average of a little over $9.50 per ton, of which 89 percent was gold, from the property until it closed in the early 1940s due to War Production Board Order L 208 (Lord, 1883, pl. 3; Smith, 1932, 11; Smith, 1943, 293; SMR, 1873-74, 63; Stoddard, 1950, 45; WPA, 1941, no. 17, 1-2).

Kossuth Mine: Claim located south of Silver City below the Dayton Mine. In the early 1870s a 600-foot shaft was sunk, which encountered much flooding below the 200-foot level. Up to 1882 an estimated 3,800 tons had been produced, yielding approximately $50,000 for an average of a little over $13 per ton., and assessments of about $421,000 were levied. In the 1930s the Dayton Consolidated Mines Co. mined a small tonnage on the 200-foot level (Lord, 1883, pl. 3; Smith, 1943, 293; Stoddard, 1950, 43; TE, 1876, Aug. 12, 3:3).

Oest Mine: Silver City District mine located about 1/2 mile southwest of Silver City. Carl Stoddard describes the mine as follows:

> "The Oest Mining Company sunk a 300-foot shaft and recorded a production from 1887 to 1892 of $564,364 from only 6,588 tons, or $85 a ton. The vein is on the Comet fault, branching off the Hayward-Oest fault, and within the meta-volcanic. It is described as a wide mineralized zone from 40 to 150 feet wide containing small lenses of high-grade gold ore. In 1921 the mine was reopened ..., but by 1925 it was being operated by leasers. The Dayton (Consolidated Mines Co.) mined 450 tons of about a $10 grade." (Stoddard, 1950, 44-45).

Emma Nevada Mine: Mine located west of Silver City and north of the Oest Mine. The claim was located in the mid-1880s and was most productive between 1885-1890, at which time the adjoining Oest and Haywood mines were also producing. During its early period it is thought to have produced $150,000 or more. The mine shut down in 1910 until the early 1930s when it was reopened (Smith, 1932, 11-12).

Haywood Mine: Silver City District mine located about 1 1/4 miles SW of Silver City and to the east of Basalt Hill. According to Alfred Merritt Smith, it is thought that the mine produced approximately $650,000 from 1880-1913. In 1912 an aerial tramway was constructed from the property to the Rock Point Mill near Dayton, and a two-compartment incline shaft was sunk to the 400-foot level. Little commercial ore was found, so a few years later the tramway and other heavy equipment were dismantled and sold. In the early 1930s the mine was owned by the St. Joe Consolidated Mines Corp., which also owned the Santiago Mine.

During 1931 the company milled about 1,800 tons from both the Haywood and Santiago mines, which produced approximately $14,500, of which about 97 percent was gold. In the mid-1980s this property, along with the nearby Santiago Mine, was owned by the Nevex Gold Co., which was employing heap-leaching to extract gold (Reno Gazette-Journal, 1985, Dec. 14, B8; Reno Gazette-Journal Weekly Supplement, 1987, June 8, 1; Smith, 1932, 13-14).

Santiago Mine: Mining property located about one mile SW of Silver City between the Oest and Haywood mines. Smith reports that the mine is thought to have produced approximately $1,000,000 between 1880 and 1913. In the 1930s it was owned by the St. Joe Consolidated Mines Corp., which also owned the nearby Haywood Mine. In 1931 the mine was reported to be producing 300 tons per month at an average of $8 to $12 per ton and was considered to be a very profitable operation. In the mid-1980s this property, along with the nearby Haywood Mine, was owned by the Nevex Gold Co., which was employing heap-leaching to extract gold (Reno Gazette-Journal, 1985, Dec. 14, B8; Reno Gazette-Journal Weekly Supplement, 1987, June 8, 1; Smith, 1932, 14, 18-19).

Daney Mine: Important Silver City District mine located south of Silver City in Spring Valley. The claim was staked in 1859 on the south end of the Silver City Branch of the Comstock Lode. In 1862 Kelly's directory described it to be a mine rivalling those of Gold Hill, an assessment which proved to be overly optimistic. Through 1881 it produced about 15,000 tons, yielding approximately $225,000 for an average of $15 per ton. It paid dividends of $56,000, the last of which was paid in 1869. Assessments of $634,000 were levied. Operations ceased in 1890 (Comp, 1980; Kelly, 1862, 94; Lord, 1883, pl. 3; Smith, 1943, 293; SMR, 1873-74, 64; WPA, 1941, no. 16, 1).

Several other mines were active in the district in the 1930s. The **Flora Temple Mine,** located south of the Overland Mine, was reported to be very active and productive during 1931. In 1932 five men were reported to be employed by the **Gordon Mine,** which was owned by Gurney Gordon and was located in the south part of the district below the Dayton Mine. The **Milwaukee Mine** operating in Long Canyon to the SW of the Buckeye Mine. The Montezuma Gold Mines Co., Ltd. began operating the **Montezuma Mine** in 1931. In the early 1930s the **Nigger Ravine Mine,** located NE of Silver City in what is now known as Negro Ravine, was reported to be idle. The **Spearhead Mine,** located about 1/2 mile north of Silver City, was experiencing some activity in the early 1930s as was the nearby **Lager Beer Mine.** In 1932 some ore was extracted from the **Western Mine;** the mine was reported to be located on the eastern edge of Silver City adjacent to the cemetery (Smith, 1932, 12-21, fig. 1).

Chapter 11

MILLS OF THE SILVER CITY AREA

This discussion covers the mills located in Gold Canyon above Silver City, then those located in the town of Silver City, followed by those located in lower Gold Canyon below Silver City.

Overland Mill: In 1932 Alfred Merritt Smith wrote that "the Overland is a ten-stamp amalgamation plant built a few years ago at the Overland mine. It is powered by electricity and has operated intermittently. At present it is being used by lessees at the Overland mine." The mill was located adjacent to the Overland Mine (Smith, 1932, 25).

Ramsell Mill: Tiny mill which was located in Gold Canyon approximately 1/2 mile northwest of Devils Gate. Variant spellings include Ramsdell and Ramsdale. It was erected in 1870, and in the 1871-72 *State Mineralogist's Report* it was reported to have 2 stamps and a 5-ton-a-day capacity and to be processing ore from the Woodside Mine. It was reported to still be operating in the mid-1870s (Comp, 1980; Lord, 1883, pl. 3, SMR, 1871-72, 138).

Succor Mill: Was located near the Sccor Mine in Gold Canyon approximately 1/2 mile northwest of Devils Gate. This early mill was originally situated on the Carson River about 1 1/2 miles below Dayton. When winter flooding changed the river's channel in the early 1860s, the mill's frame was moved to Gold Canyon. In 1865 the *Gold Hill News* reported it to be a 20-stamp mill with a 50 horsepower engine consuming 5 cords of wood per day; it had 24 common pans and 2 Hepburn pans for amalgamation, a capacity of 27 tons per day, and 14 employees. In the early 1870s it was listed as having 15 stamps and a 25-ton-a-day capacity but was idle (GHN, 1865, June 27, 3:3; Kelly, 1863, 313; Lord, 1883, pl. 3; SMR, 1871-72, 138).

Hartford Mill: Cyanide mill which was located in Gold Canyon on the east side of Hartford Hill above the Lucerne Cut. It was operated by the Hartford Mining Co. and had a production of nearly $400,000 from an estimated 72,000 tons for an average of about $5.50 per ton for the period 1935-1940. There are extensive ruins on the site (Comp, 1980; Stoddard, 1950, 41).

St. Louis Co.'s Mill: Early day mill located approximately 1/4 mile above Devils Gate. In 1862 its main building measured 50 x 60 feet, and it had four arastras which were crushing ore from its own mine, the St. Louis Mine. In Kelly's directory it was reported to have a 20-ton-a-day capacity, and Collins reported it to have a 40 horsepower engine (Collins, 1864-65, 250; Kelly, 1862, 173-74; 1863, 313-14).

Boston Mill: Small mill that was situated approximately 1/10 mile northwest of Devils Gate. In the early 1870s it was listed as having 5 stamps and to be processing ore from the Empire and Gold Hill mines (Lord, 1883, pl. 3; SMR, 1871-72, 138).

Devils Gate Mill: Was erected in the early 1860s just below Devils Gate. In Collin's 1864-65 directory it was listed as having a 24 horsepower steam engine, 16 stamps, 24 pans, and a capacity of 20 tons in 24 hours. It was formerly known as the Washoe Mill. The *Gold Hill News* in 1865 described it as having 12 stamps and 10 pans, using 4 cords of wood a day, employing 10 men, and crushing 8 tons a day. In the 1866 *State Mineralogist's Report* it was reported to be using 5 cords of wood a day, running 8 stamps and 10 Hepburn pans, and reducing 14 tons a day. In the early 1870s it was listed as having 12 stamps and a 24-ton-a-day capacity (Collins, 1864-65, 315; GHN, 1865, June 5, 3:2; Lord, 1883, pl. 3; SMR, 1866, 149; 1871-72, 100).

McTigue Mill: This reduction establishment was built on a group of claims just below Devils Gate. Originally it was an amalgamation stamp mill having 15 stamps weighing 800 pounds each. It operated as a stamp mill for about 30 years and was converted by the Recovery Milling Co. in the 1930s to a ball and flotation mill. The mill was later leased to the Dayton Consolidated Mines Co. for flotation concentration of ore from the Keystone Mine. In 1933 the South Comstock Gold Mines Co. bought the Recovery Co.'s holding and from 1934-1940 recorded a production of about 66,000 tons, yielding approximately $588,000. At that time it was known as the South Comstock Mill. Since then the mill has been idle. Cement pilings and scattered foundations remain (Comp, 1980; Smith, 1932, 25; Stoddard, 1950, 41-42; Gerald B. Hartley Jr., 1982, personal commun.).

Trimble Mill: This well known mill was built in 1900 in Silver City by R. A. Trimble and Nate Dunsdan. Originally it was a 5-stamp mill, but later it was increased to 13 stamps, weighing 900 pounds each. It was a simple amalgamating plant, and Smith reported that the process was never changed through the early 1930s. This was one of the district's major mills during the mining boom of the 1930s. It was located below the McTigue Mill. Some ruins remain at the site (Comp, 1980; Smith, 1932, 23-24; Gerald B. Hartley, Jr., 1982, personal commun.).

Pioneer Quartz Co.'s Mill: Shown on Bancroft's 1862 map as located near the Trench Mill in lower Silver City. Collins and Kelly place it closer to Devils Gate. In Kelly's 1863 directory it was described as having a 40 horsepower steam engine, 15 stamps, a 20-ton-a-day capacity, and to be reducing ore from its own mine in Gold Hill. In his 1864-65 directory Collins reported it to have 15 stamps, 3 Hepburn and 28 Knox pans, a main building measuring 100 feet square, and a capacity of 20 tons a day. He went on to say that "for three years it has been the most successfully worked Mill in the Territory -- not having stopped operations longer than 20 hours at any time during that period" (Collins, 1864-65, 315; Kelly, 1863, 359-60).

Pioneer Mill: This mill frequently is given credit for being the first steam mill to operate on the Comstock. It was built by Almarin B. Paul, and most accounts agree that it commenced operations on August 13, 1860. Some sources claim that the Coover & Harris Mill in Gold Hill started up a day or two sooner, whereas other reports claim that both mills started on the same hour of the same day. The Logan & Holmes Mill, a 2-stamp mill powered by horses, commenced operations near Chinatown (Dayton) in the fall of 1859. A water-powered mill, the Hastings & Woodworth Mill, also started up near Chinatown in the fall of 1859. In any event, the Pioneer Mill was either the first or second steam mill to operate on the Comstock. In Kelly's 1862 directory it was listed as the Pioneer Mill of the Washoe Gold & Silver Mining Co., No. 1. It was also known as the Washoe Mill and Paul's Pioneer Mill. Kelly's 1863 directory reported it to have a 40 horsepower steam engine, 32 stamps, and 24 pans; to crush 30 tons a day; and to employ 15 men (Bancroft, 1862, map; Kelly, 1862, 199; 1863, 359).

Confidence Mill: Reported by the *Territorial Enterprise* in 1866 to be located just below Devils Gate. The newspaper article went on to say that for some time an amalgamator had been suspected of stealing small amounts of amalgam from the mill. Consequently, he was watched and caught in the act of straining the quicksilver through his handkerchief as he poured it back into the pan, thus securing quite a bit of raw bullion, which was found in his pocket. The article ended by reporting that the amalgamator and his accomplices "are at present snugly ensconced in the Dayton Jail." No more information was found on the mill (TE, 1866, Dec. 7, 3:1).

Sherman & Co. Mill: Tiny mill which was situated in Silver City near the Hope Mill. In 1865 the *Gold Hill News* described it as being water-powered with 5 stamps and 2 pans, using one cord of wood a week, reducing 4 tons a day from the Occidental Mine, and employing 2 men. In the 1869-70 *State Mineralogist's Report* it was listed as having 5 stamps and 4 pans. Apparently the mill was moved to Bodie, California in the late 1870s (Comp, 1980; GHN, 1865, June 5, 3:1; Lord, 1883, pl. 3; SMR, 1869-70, 15).

Hope Mill: Was located in the heart of Silver City near the Sherman Mill. In the 1869-70 *State Mineralogist's Report* it was listed as having 10 stamps and 6 pans. In 1871 it was purchased by the Buckeye Mining Co. In the early 1870s it was reported to have 10 stamps and a 20-ton-a-day capacity (Lord, 1883, pl. 3; SMR, 1869-70, 15; 1871-72, 100; TE, 1871, June 14, 3:1).

Trench Mill: Built in 1860 in lower Silver City near the mouth of American Ravine, this mill was originally known as the Sparrow & Trench Mill for its owners, Erastus Sparrow and Joseph Trench, who had a mine by the same name in Gold Hill. In Kelly's 1862 directory it was reported to have cost approximately $40,000; to have a main building measuring 50 x 80 feet plus dwellings, stables, and other out buildings; to possess a 30 horsepower engine and 12 stamps which worked both gold and silver; to reduce 12 tons a day; and to employ 16 persons. In 1865 it was listed as using 6 cords of wood a day, having 20 stamps and a 30-ton-a-day capacity, and employing 15 men. In 1869 it was purchased by John Mackay and James Fair. In the early 1870s it was listed as having 40 stamps and a 20-ton-capacity. Some early accounts mistakenly listed Trench as French, i.e. Bancroft's 1862 map (GHN, 1865, June 5, 3:1; Kelly, 1862, 200; SMR, 1871-72, 100; TE, 1869, July 13, 3:2).

Sullivan Mill: Described by the *Territorial Enterprise* as an obsolete mill adjoining the Trench Mill, which was bought by Mackay and Fair and torn down to give more room to the Trench Mill. It was reported to be built by Jerry Sullivan of San Francisco and was one of the oldest mills in the area (TE, 1869, July 13, 3:2).

Donovan Mill: Smith writes that "the first cyanide plant in Silver City was built by the late Professor R. D. Jackson, one time Dean of the University of Nevada School of Mines prior to the founding of the well-known Mackay School of Mines. In 1900 Jackson formed a partnership with Dr. J. Warne Phillips, who resigned from the chair of Physics and Chemistry at the University of Nevada to engage in mining and milling with Prof. Jackson at Silver City. A few years later Phillips bought out Jackson, and after a time sold to Wm. Donovan, Sr., father of the present owner. Dr. Phillips designed and installed the huge tailings derrick, the outstanding feature of the plant."

Apparently the Donovans operated the mill from 1912 to the 1940s. The mill's well preserved buildings stand on the east side of Silver City's main street across from the mouth of American Ravine. It was one of Silver City's major mills during the district's mining boom in the 1930s (Smith, 1932, 25-26; Stoddard, 1950, 41-42).

Pollard & Trimble Mill: Representing one of the earliest cyanide leaching plants on the Comstock, this mill was built by R. A. Trimble in 1900. In 1909 William Donovan, Sr. purchased the mill and operated it in conjunction with the Donovan Mill for many years. The mill was located below Silver City to the south of the Donovan Mill. The remains of this mill include extensive foundations and debris, several partially buried cyanide leaching vats, and a series of zinc precipitation boxes (Comp, 1980).

Burke & Co.'s Mill: Lower Silver City mill which was situated at the junction of Gold Canyon and American Ravine. It was originally known as McNulty's Mill and was reported to be one of the oldest mills in the Territory. Later it was owned by Burke, Hillyer, and Brevoort. Kelly reported that it was always a successful operation. Bancroft's 1862 map

listed it as Brevoorts Mill. It was a steam mill having 5 stamps with a 10-ton-a-day capacity (Bancroft, 1862, map; Kelly, 1863, 360).

Bacon Mill: Bacon Mill & Mining Co. mill located in lower Silver City at the intersection of Gold Canyon and American Ravine. In an 1864-65 directory it was described as having been built in 1862 and rebuilt in 1863; having 30 stamps, 34 pans, and a 45 horsepower steam engine; and reducing 20 tons in 24 hours. In 1865 it was listed in the *Gold Hill News* as having 20 stamps, 17 pans, and 15 employees; using 6 cords of wood a day; and crushing 30 tons a day from the Bacon Mine in Gold Hill. In 1868 the *Territorial Enterprise* reported it to be owned by the Bank of California, which was controlled by William Sharon, and in 1869 John Mackay and James Fair purchased the mill to process Hale & Norcross ore. In the 1871-72 *State Mineralogist's Report* it was listed as having 20 stamps and a capacity of 40 tons. Stone foundations remain (Collins, 1864-65, 316; Comp, 1980; GHN, 1865, June 5, 3:1; Lord, 1883, 305, pl. 3; SMR, 1871-72, 100; TE, 1868, Jan. 21, 1:2).

Union Mill: Reduction facility built in 1861 in American Ravine above the Bacon Mill. Kelly's 1863 directory reported it to have a 40 horsepower engine, 5 stamps, 8 wooden tubs, and one Wakelee pan; to crush 16 tons a day; and to employ 10 men. In Collin's 1864-65 directory it was listed as having 10 stamps, a 20 horsepower engine, 8 wooden tubs, and one Wakelee pan; to reduce 15 tons a day; and to employ 10 (Collins, 1864-65, 316; GHN, 1863, Dec. 24, 3:2; Kelly, 1863, 361).

Knickerbocker Mill: Small mill erected in the early 1860s in lower Silver City near American Ravine. It was a water-powered mill driven by a 32-foot water wheel and had 5 stamps and 2 pans. Collins wrote that "small though this Mill may appear in comparison with those surrounding it, yet owing to the advantage of water power and good management, it is perhaps more profitable to its owners than mills that boast greater capacities." (Collins, 1864-65, 315-16; Kelly, 1863, 360).

Kelsey Mill: Lower Silver City mill which was situated near the junction of Gold Canyon and American Ravine. In 1863 it was described as having a 40 horsepower engine, 15 stamps, and a capacity of 20 tons in 24 hours; running constantly on Gould & Curry ore; and employing 9 men. It was owned by Melville Kelsey and S. W. Collins. In 1868 it was known as the Kelsey & Lyon Mill, and in the early 1870s it was listed as having 15 stamps and a capacity of 30 tons a day. Jacksons Mill (later the Donovan Mill) was later built on the same site (Comp, 1980; Kelly, 1863, 361; Lord, 1883, pl. 3; SMR 1871-72, 100; TE, 1868, Jan. 21, 1:2).

Eastern Slope Mill: This mill was reported to be located in Silver City approximately 1/2 mile below Devils Gate. It began operating in 1861 and was owned by the Eastern Slope Mill & Mining Co. Kelly's 1863 directory showed it to have a 40 horsepower steam engine, 12 stamps, 12 employees, and a 20-ton capacity. In 1865 it was reported to be a 16-stamp, steam mill using 5 1/2 cords of wood a day, possessing 6 pans for amalgamation, employing 11 hands, and processing 20 tons a day from the Challenge Mine. In the 1866 *State Mineralogist's Report* it was listed as having the same number of stamps and pans and same capacity as in the 1865 newspaper account (Bancroft, 1862, map; Collins, 1864-65, 316-17; Kelly, 1863, 361; GHN, 1865, June 5, 3:2; SMR, 1866, 149).

Dayton Consolidated Mill: The extensive group of buildings belonging to this cyanide mill stand on a hill due west of the intersection of Nevada State Route 341 and 342 below Silver City. Large tonnages were processed here in the 1930s by the Dayton Consolidated Mines

Co. Even though from the exterior this sprawling facility appears to be intact, its interior is reported to be fairly well dismantled. The mill was closed by order of the War Production Board in 1942 and apparently operated for a short while in the late 1940s (Comp., 1980; Stoddard, 1950 41-42; Gerald B. Hartley, Jr., 1982, personal commun.).

Other early mills in the Silver City area included the "Barrel Mill," Buckeye Mill, Golden Age Mill, Horn Mill, and Silver City Quartz Mill. In 1866 the *Territorial Enterprise* reported that a **"Barrel Mill"** was located in Silver City between the Eastern Slope and Phoenix Mills, that it had 2 settlers and 4 barrels, and was for sale. The **Buckeye Mill** was described by the *Gold Hill News* in 1865, as having 10 stamps, 8 Wheeler pans, 4 settlers, and a 40 horsepower engine; it was reducing 24 tons a day and running on ore from the Savage Mine. In 1871 the **Golden Age Mill** was built in Silver City to process ore from the Dayton Mine; at that time it had 5 stamps and a 10-ton capacity. The 1871-72 *State Mineralogist's Report* listed the **Horn Mill** as being located in Silver City and having 20 stamps with a 40-ton capacity; no further information was found on this mill. Kelly's 1863 directory described the **Silver City Quartz Mill** as being located a little above the Trench Mill in Silver City; costing about $35,000 and beginning operations in 1861; and having 5 stamps, a 35 horsepower steam engine, and a 10-ton-a-day capacity (GHN, 1865, May 9, 3:1; 1871, Jan. 8, 3:2; Kelly, 1863, 361; SMR, 1871-72, 100; TE, 1866, July 18, 2:4).

Phoenix Mill No. 1: Was located near the Eastern Slope Mill in Gold Canyon approximately 1/2 mile below Silver City. It was erected in 1860 and in Kelly's 1863 directory was reported to be geared more for processing of gold than silver. At that time it had 16 stamps, 8 of which were wood and 8 which were iron, and 32 Hungarian bowls; ran on steam power; reduced 20-24 tons a day; and employed 8 men. The *Gold Hill News* in 1865 described it as having 16 stamps and 6 pans; using 4 1/2 cords of wood a day, and reducing 22 tons of Crown Point ore in a day. In 1868 the mill was reported to be owned by the Bank of California, which was controlled by William Sharon (Bancroft, 1862, map; GHN, 1865, June 5, 3:1; Kelly, 1863, 362; TE, 1868, Jan. 21, 1:2).

Phoenix Mill No. 2: Reported to have been erected in 1861 near Phoenix Mill No. 1. In 1863 it was described as having a main building measuring 80 x 100 feet, a 72 horsepower steam engine, and 24 stamps with a capacity to crush 28-32 tons in 24 hours. On the premises were two stone buildings and several frame ones serving as an office, assay office, blacksmith shop, and employee residences; eighteen men were employed. In 1865 it was reported to have 20 stamps and 34 pans, to use 6 1/2 cords of wood per day, and to process 30 tons of ore a day from the Crown Point Mine. It was destroyed by fire in 1866 (Collins, 1864-65, 317; GHN, 1865, June 5, 3:2; Kelly, 1863, 362; TE, 1866, Oct. 21, 3:2).

Dodge & Merchant Mill: Early mill located in Gold Canyon below the Phoenix Mills at the junction of the Rock Point Mill and Dayton roads. Kelly's 1863 directory described it as having a 35 x 95-foot main building, a 16 horsepower steam engine, 8 stamps, a 12-ton capacity, and 14 employees. Its proprietors were E. K. Dodge and S. D. Merchant. Collin's 1864-65 directory listed it under the name of Merchants Mill and reported it to have been built in 1861 and to have 12 stamps, 8 wood amalgamators and 9 pans, a 15 horsepower engine, a 15-ton capacity, and 12 employees. In 1865 the *Gold Hill News* reported that the mill was closed (Collins, 1864-65, 318; GHN, 1865, June 5, 3:1; Kelly, 1863, 362-63).

Swansea Mill: Was situated in Gold Canyon about one mile below Silver City and below the Phoenix Mills. It was erected in 1862 and at that time had 12 stamps and a 20-ton-capacity and employed 12 men. In 1865 it was described as a steam mill using 5 cords of wood per day, having 14 stamps and 22 pans, crushing 20 tons a day from the Empire Mine, and employing 10 hands. The Bank of California acquired it in 1866, and in the early 1870s it

was listed as having 12 stamps and a capacity of 25 tons but was idle. Later the mill was known as Humphreys Mill and was moved to Bodie, California in the late 1870s (Bancroft, 1862, map; GHN, 1865, June 5, 3:1; Kelly, 1862, 201; Lord, 1883, 246, pl. 3; SMR, 1871-72, 100).

Excelsior Mill: Reported to have been built in the early 1860s about 1/4 mile below the Swansea Mill in the vicinity of Johntown. In 1863 Kelly described it as a "first-class mill." It was reported in 1865 to be run on steam, to have 8 stamps and 12 pans, to use 3 cords of wood per day, to reduce 10 tons a day from the Yellow Jacket Mine, and to employ 9 men. In the 1871-72 *State Mineralogist's Report* it was listed as having 10 stamps and a 20-ton-a-day capacity. The mill was reported still to be operating in the early 1880s (Collins, 1864-65, 317; Comp, 1980; GHN, 1865, June 5, 3:2; Lord, 1883, pl. 3; SMR, 1871-72, 100).

Sacramento Mill: Shown on Bancroft's 1862 map as located in Gold Canyon above Johntown and below the Excelsior Mill. Kelly's 1863 directory reported it to have a 40 horsepower engine, 18 stamps, 12 pans for working both gold and silver, and a capacity of 30 tons a day. In 1865 it was described by the *Gold Hill News* as using 4 1/2 cords of wood a day, having 12 stamps and 12 pans, crushing 18 tons of Belcher Mine ore a day, and employing 12 hands. In the early 1870s it was listed as having 12 stamps and a 25-ton capacity and as being shut down (GHN, 1865, June 5, 3:1; Kelly, 1863, 364; SMR, 1871-72, 100).

Monitor Mill: Small reduction facility located at Johntown which was described by the *Gold Hill News* in 1865 as having 5 stamps and 5 pans, using 2 cords of wood per week, reducing 5 tons a day, and employing 4 men. It was destroyed by fire in 1870 (GHN, 1865, June 5, 3:2; TE, 1879, Apr. 12, 3:1).

Atlanta Mill: Lower Gold Canyon reduction establishment which was situated below Johntown and below the Sacramento Mill. In the 1869-70 *State Mineralogist's Report* it was listed as having 10 stamps and 6 pans. The *Territorial Enterprise* reported in 1871 that the mill was installing 10 Parke pans for purposes of working tailings. The 1871-72 *State Mineralogist's Report* listed it as having 12 stamps and a 25-ton capacity but to be inoperative. In 1873 it was refitted to work tailings exclusively, with a capacity of 30 tons of tailings a day and apparently operated in the 1880s (Comp, 1980; Lord, 1883, pl. 3; SMR, 1869-70, 14; 1871-72, 100; TE, 1871, June 8, 3:1; 1873, Apr. 2, 3:1).

Weston & Co. Mills: Situated in lower Gold Canyon approximately 1 1/2 to 2 miles above Dayton and originally known as Van Horn & Co.'s Mill, which Kelly's 1862 directory described as a water-powered mill with 6 stamps. Kelly's 1863 directory listed it as the Weston, Whipple, and Simon Mill. There were two mills in close proximity that went by the name of Weston & Co. Mills. Weston & Co. Mill No. 1 was a water-powered mill reported in 1865 to have 10 stamps and 6 pans, to use 3 cords of wood per week, and to process 3 tons of ore a day from the Enterprise Mine. In the 1866 *State Mineralogist's Report* it was listed as having 10 stamps and 8 tubs and processing 11 tons per day. The Weston & Co. Mill No. 2 was a steam-powered mill reported in 1865 to have 15 stamps and 9 pans, to use 26 cords of wood per week, and to reduce 20 tons a day from the Enterprise Mine. In the 1866 *State Mineralogist's Report* it was listed as having 15 stamps, 9 Wheeler pans, and a 14-ton-a-day capacity (Bancroft, 1862, map; GHN, 1865, June 5, 3:2; Kelly, 1862, 202; 1863, 364; SMR, 1866, 149).

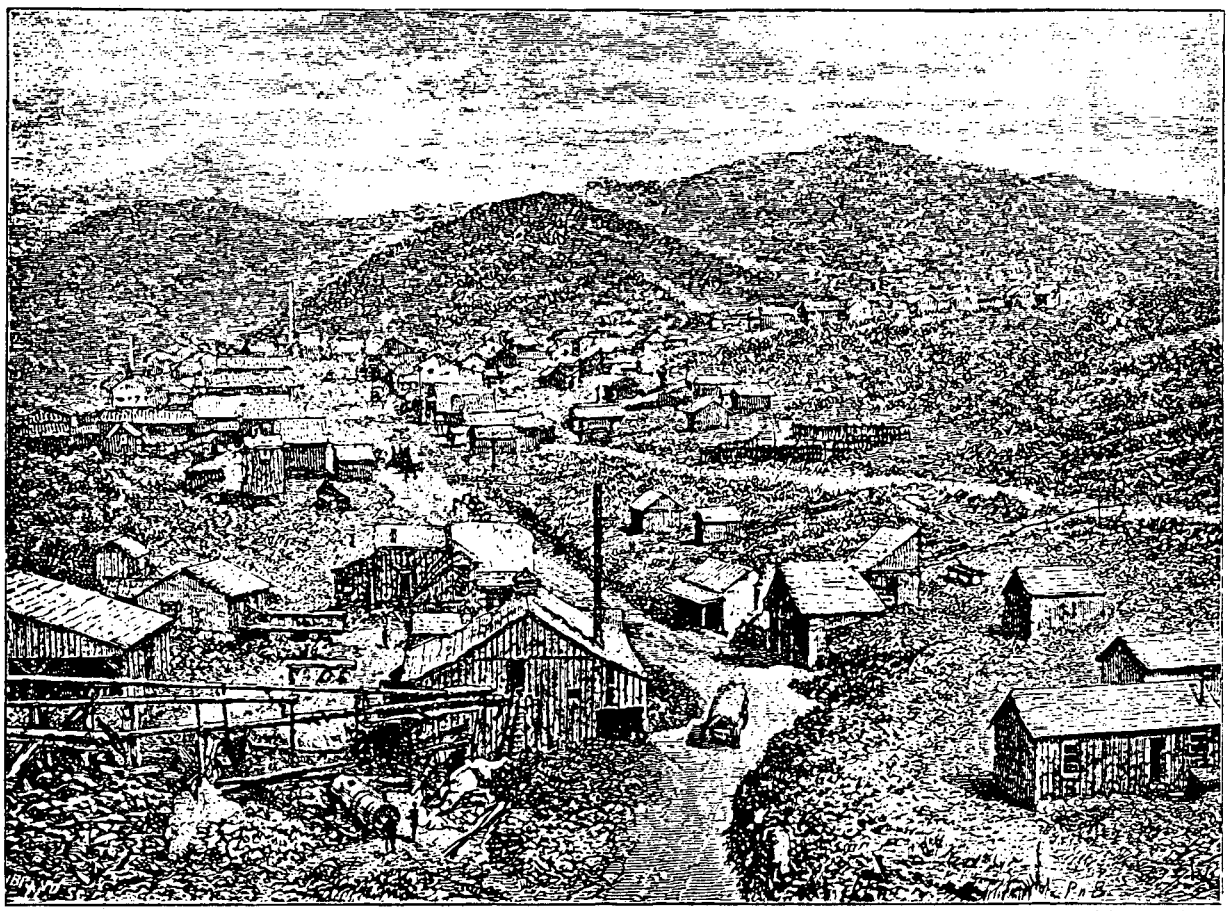
Osgood & Co.'s Mill: Lower Gold Canyon mill reported to be located at the junction of Holmes & Logan and Dayton roads. Kelly's 1862 directory reported that it had an 18 horsepower engine, 8 stamps, and a main building measuring 35 x 95 feet. It used the Bertola process, employed 12 men, and Osgood and Chapin were its proprietors. It was also

called Chapins Mill and possibly was the same as the Bartola (Bartoli, Bertola) Mill, which was reported in 1865 to have a 16 horsepower steam engine, 8 stamps, and 8 Knox pans; to use 3 cords of wood a day, to reduce 9-10 tons in 24 hours, and to employ 9 men (Bancroft, 1862, map; Collins, 1864-65, 316; GHN, 1865, June 5, 3:2, Kelly, 1862, 201; SMR, 1866, 149).

The following are additional early mills that were located in lower Gold Canyon below Silver City. Plate 3 of the Lord report shows **Henchs Mill** as located in Gold Canyon approximately 1/4 mile below Silver City. Bancroft's 1862 map shows **Brooks Mill** to be situated below Silver City near the Eastern Slope Mill and the **Gold Canyon Reduction Works** to be located between Brevoorts Mill (Burke & Co.'s Mill) and Brooks Mill. In 1865 the *Gold Hill News* reported the Gold Canyon Reduction Works to be a 20-stamp, steam mill with 16 pans. Kelly's 1862 directory listed **Kelloggs Mill** as having a main building measuring 40 x 64 feet, a 20 horsepower steam engine, 8 stamps, and a 15-ton capacity; it was located about 1/2 mile below Silver City. Bancroft's 1862 map shows the **McDonald Mill** in lower Gold Canyon just below Johntown and **Barrys Mill** site in lower Gold Canyon below Van Horns Mill (Weston & Co.'s Mill). Both the Golden Eagle Mill and the Metallurgical Works were reported in 1868 by the *Territorial Enterprise* to be located in lower Gold Canyon west of Dayton. In the 1866 *State Mineralogist's Report* the **Golden Eagle Mill** was listed as a 10-stamp, steam mill consuming 3 1/2 cords of wood a day and having 25 tubs and a 13-ton capacity. In the same report the **Metallurgical Works** was listed as a steam mill using 5 cords of wood a day and possessing 15 stamps, 6 Wheeler pans, and a 16-ton capacity. The 1869-70 *State Mineralogist's Report* listed the **Keystone Mill** as having 5 stamps and 6 pans; in the early 1870s it was reported to be a tailings mill in Gold Canyon. No exact location was given for this mill (Bancroft, 1862, map; GHN, 1865, June 5, 3:2; Kelly, 1862, 202; Lord, 1883, pl. 3; SMR, 1866, 149; 1869-70, 15; TE, 1868, Jan. 21, 1:2).

Daney Mill: Sizeable mill which was located south of Silver City in Spring Valley approximately 200 yards from the Daney Mine. In 1863 Kelly wrote that it "presents the appearance of quite a small town" with its numerous dwellings and other out buildings. At that time its main building measured 50 x 100 feet, and the mill had 15 stamps and a 50 horsepower engine. Only 3 employees were needed to run the mill, causing Kelly to describe it as "the most perfect labor-saving institution in the Territory." The *Gold Hill News* in 1865 reported it to have 15 stamps, to be using 6 cords of wood per day, to employ 9 men, and to be processing ore from the Savage Mine. In 1868 the mill was reported to be owned by the Bank of California, which was controlled by William Sharon, and in the early 1870s it was listed as having 15 stamps and a 30-ton capacity and to be shut down (GHN, 1865, June 5, 3:2; Kelly, 1863, 365; SMR, 1871-72, 100; TE, 1868, Jan. 21, 1:2).

Also reported as located in Spring Valley between Silver City and Dayton were the Dana and Spring Valley mills. An 1866 article in the *Territorial Enterprise* described the **Dana Mill** as a 10-stamp mill with one of the finest engines in the state. It had been idle about a year, and a new owner was reported to be refurbishing it with plans to soon put it into operation. The **Spring Valley Mill** was listed in the early 1870s as having 10 stamps with a 20-ton capacity (SMR, 1871-72, 100; TE, 1866, June 16, 2:2).



From a Photograph.

SILVER CITY, NEVADA.

Silver City (unidentified source).

Chapter 12

THE SUTRO TUNNEL, ADOLPH SUTRO, AND THE TOWN OF SUTRO

No volume on the mines and mills of the Comstock would be complete without coverage of the Sutro Tunnel, its builder, and the town of Sutro.

The Sutro Tunnel or Adolph Sutro's "Coyote Hole"

Known by its detractors as Sutro's Folly or Sutro's Coyote Hole, the Sutro Tunnel was one of the most controversial undertakings on the Comstock. Almost 15 years elapsed between Adolph Sutro's inception of the idea of a tunnel to drain and ventilate the Comstock and the tunnel's completion in the late 1870s. If the tunnel had been completed five years earlier, Adolph Sutro might have eclipsed the "Big Four," Mackay, Fair, Flood, and O'Brien as "King of the Comstock." Nonetheless Sutro's reputation for being stubborn and persistent against the most formidable opposition has given him a special place in the history of the Comstock.

One of the engineering marvels of its time, this drainage and ventilation tunnel extended from the town of Sutro in western Lyon County approximately 20,498 feet, or over three miles, northwest through the mountains to Virginia City. Drainage of the Comstock mines was not a problem until 1861, but as the shafts went deeper both water and ventilation became a problem. Prior to the Sutro Tunnel, several less grandiose tunnels were constructed to drain the shafts. The Sutro Tunnel Co. was incorporated in 1865, and work on the tunnel commenced in October 1869. The moving force behind the project was Adolph Heinrich Joseph Sutro. The undertaking was actively opposed by William Sharon, who at the time was "King of the Comstock," and many mine operators, because the mining companies had signed contracts binding them to pay royalties of $2 to the Sutro Tunnel Co. for every ton of ore extracted from their mines after their mines were serviced by the tunnel.

The 1871-72 *State Mineralogist's Report* described the progress of the tunnel. At that time it had reached a distance of 3,300 feet and was advancing at a rate of 3 1/2 feet a day. A railroad track was laid in the tunnel as fast as the tunnel advanced, and the track was raised 16 inches to allow for passage of water. Work on the tunnel's four ventilation shafts was also in progress at the time.

Despite the organized opposition and chronic funding problems, because of Sutro's dogged determination, the tunnel connected with the Savage Mine in Virginia City on July 8, 1878. The tunnel intersected the Comstock Lode at an average of 1700-2000 feet vertically beneath the surface. It drained the entire Lode and measured about 7 - 7 1/2 feet high, 8 feet wide across the top, and 9 - 9 1/2 feet wide across the bottom for most of its length. It cost approximately $6,500,000, including interest, and reached the Comstock Lode after almost all the rich ore had already been extracted, seriously eroding the potential of the $2-per-ton royalty. In 1879 Sutro resigned as superintendent of the company, sold all his stock, and moved to San Francisco where he made a fortune in real estate. Because of the decline of the Comstock, this engineering marvel was a financial failure, so much so that the Sutro Tunnel Co. was foreclosed on in the late 1880s. The tunnel was an engineering success and was used to drain the Gold Hill mines for over half a century. The tunnel's portal is still in existence at the site of the town of Sutro in Lyon County about 4 miles northeast of Dayton (Becker, 1882, 6; Lord, 1883, 230-43; Shamberger, 1969, 31-37; SMR, 1871-72, 99-100).

Sutro, the Man for Whom the Tunnel was Named

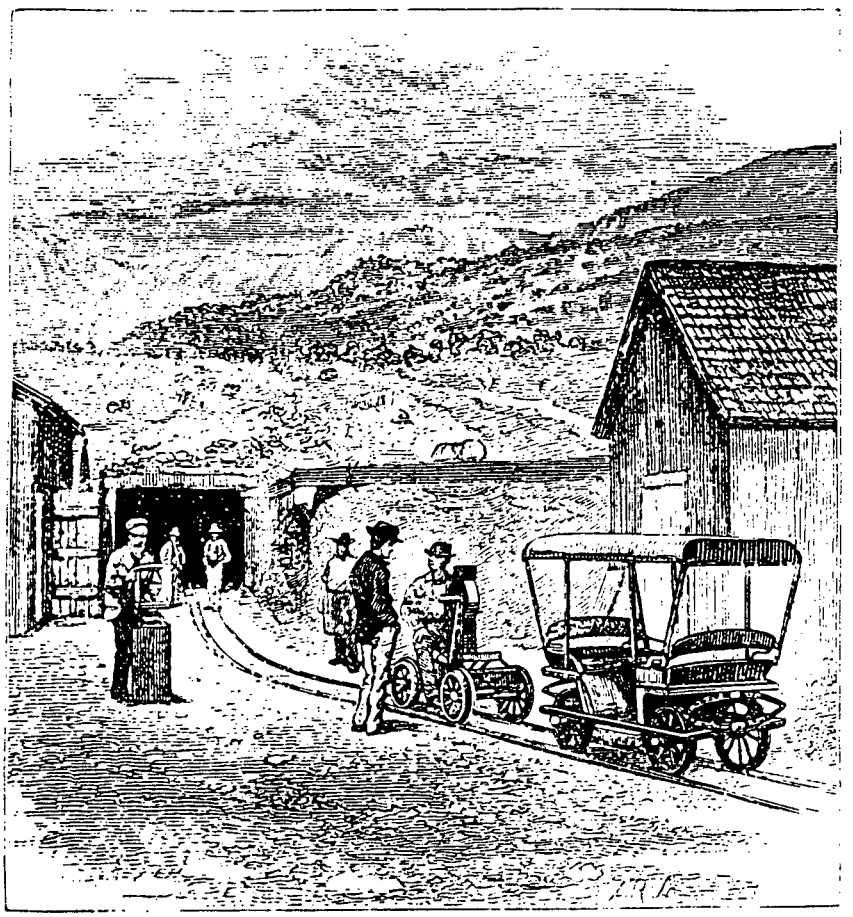
Undoubtedly Adolph Heinrich Joseph Sutro (1830-1898), a Jew of German Descent, was one of the most remarkable personalities on the Comstock. He was born in Prussia, emigrated to New York City in 1850, and settled in San Francisco in the early 1850s, where he became the proprietor of several stores. He made his first trip to the Comstock in 1859 and returned in the early 1860s to become involved in quartz milling at Dayton. In about 1864 he became interested in the concept of building a long tunnel to drain water from the mines and to provide the mines with ventilation. In 1865 the Nevada Legislature passed an act granting Sutro an exclusive franchise to build and operate the tunnel for a 50-year period. Sutro persuaded mine owners to sign contracts giving his Sutro Tunnel Co. $2 per ton for all ore mined after the completion of the tunnel. First he had the support of the powerful Bank of California, controlled by William Sharon and William Ralston, but soon they turned against him, hoping to gain control of the tunnel and reap the profits. Work on the tunnel commenced in 1869, and it was not completed until 1878. The intervening years of financial problems and organized opposition from William Sharon and many mine operators including John Mackay and James Fair would have discouraged and broken most men, but Sutro refused to give up. His battle for funding for the tunnel took him to New York, the halls of the United State Congress, and the financial houses of Europe. The Sutro Tunnel was an engineering triumph but a financial failure because its completion came after the Comstock had started to decline. In 1879 Sutro sold his interests in the tunnel and moved to San Francisco where he invested his profits in real estate. In the early 1880s he bought Cliff House and thousands of adjacent acres fronting on the ocean, which became known as Sutro Heights. At one time he was reported to have owned about one-twelfth of the acreage in the San Francisco area. In 1894 he was elected mayor of San Francisco and served a tumultuous two-year term (Lord, 1883, 230-43; Smith, 1943, 107-15).

The Town of Sutro

Historic town site located approximately one mile north of U.S. Highway 50 at a point 2 1/4 miles northeast of Dayton. Work began on the Sutro Tunnel in 1869 and by 1870 a cluster of buildings had grown up near the entrance to the tunnel. In 1872 Adolph Sutro laid out a model city and claimed that Virginia City would become a ghost town after its mills were relocated to his city and that miners would prefer to live in Sutro, passing through the tunnel on their way to and from work. In 1872 the following description of the settlement appeared in the *Territorial Enterprise*:

> "The town is laid out in squares. The streets and avenues have already been named and numbered. Feminine appellations seem to predominate. The avenues have been named as follows: Adele, Bertha, Clara, Dora, Eliza, Florence, Gertrude, Helena, Ida, and Jeanne. The main street (numbered 27) leading from the tunnel is 200 feet in width. Florence Avenue, which intersects it at right angles is 150 feet in width. The blocks had been divided into inside lots 25 x 130, with corner lots 50 x 65. The price of inside lots at present ranges from $100 to $600. One corner lot has been sold for $1,500 ... At present the town contains two boarding houses, one saloon, one billiard room, and one clothing store. The young town of Sutro bids fair to become one of the prettiest hamlets in the State ... "

The same article went on to describe Adolph Sutro's residence as being a handsome structure of Italian villa-style architecture. The main building was 45 feet square and three stories high with two wings measuring 20 x 25. The ground floor was used for offices, and all rooms were reported to be elegantly furnished. Each room was supplied with hot and cold water and gas with the bathrooms provided with hot and cold water, and steam. There was an observatory on the roof for viewing the surrounding country, and an artificial lake was being constructed in the front. The 1871-72 *State Mineralogist's Report* described the house as having cost over $40,000 and as one of the finest residences in the state. The house was destroyed by fire in the 1930s. By 1876 Sutro had 600-800 residents and possessed a school, church, post office, a weekly newspaper, several fine residences, and a hospital. In 1880 after the completion of the tunnel, there were about 435 residents, most of whom left by the end of the century. Today little remains of the town except the barred entrance to the tunnel (Paher, 1970, 75; SMR, 1871-72, 98-99; TE, 1872, Nov. 2, 3:2).



ENTRANCE TO SUTRO TUNNEL.

Entrance to the Sutro Tunnel ("The Wheeler Survey in Nevada," *Harper's New Monthly Magazine*, June 1977, p. 76).

Chapter 13

CARSON RIVER MILLS - EMPIRE AREA

Some of the largest mills of the Comstock were the water-powered ones that lined the Carson River from Empire to below Dayton. These mills are discussed in two chapters, one on the Empire-area mills, including all the Ormsby County-Carson River mills, and the other on the Dayton-area mills, including all the Lyon County-Carson River mills.

The Town of Empire

This former town site is located on the east bend of the Carson River about six miles southwest of Dayton. This one-time thriving lumber and quartz-milling center rose and fell with the fortunes of the Comstock mines. The lumber from its wood yards fed the mines of Virginia City and Gold Hill, and its quartz mills crushed wagon loads and, later, train loads of Comstock ore.

The town's history can be traced to the mid-1850s when Nicholas Ambrosia, better known as "Dutch Nick," operated a ranch and station at the point where the overland emigrant and stage road met at the Carson River. This station became known as "Dutch Nick's" or "Nick's Station." The town site was laid out in 1860, at which time it was christened Empire City. According to Cleator, the auspicious name was selected with the expectation that it would become a very large city.

In the early 1860s several quartz mills were built on the Carson River in and to the east of Empire City. The largest of these Ormsby County-Carson River mills were the Mexican (Spanish), Morgan (Yellow Jacket), Brunswick, Merrimac, Vivian, and Santiago. Some of these mills operated over a period of nearly 40 years.

Empire City became a station on the Virginia & Truckee Railroad when the section of the railroad between Virginia City and Carson City was completed in 1869. In the early 1870s the town had a population of 300-400 made up of laborers and their families from the neighboring quartz mills and wood yard. At that time there were two general stores, one of which was reported to be very large and well stocked; a dance hall; four saloons; and a beef market. The school had an enrollment of about 45. The town was the terminus of all floats of lumber and wood down the Carson River.

In the 1880s as activity on the Comstock waned, Empire City's population diminished. In 1895 its name was changed from Empire City to Empire. Its post office operated from January 1866-December 1912. In 1937 the Virginia & Truckee station house was removed from the town site. Today little remains of this once-bustling town except some mill ruins and a cemetery (Angel, 1881, 652-63; Cleator, 1913, 196; Harris, 1973, 22; Paher, 1970, 47-51; SMR, 1871-72, 117).

The Ormsby County-Carson River Mills

The canyon formed by the Carson River between the site of Empire and the town of Dayton now has returned pretty much to its natural state and is fairly quiet and deserted. Viewing it today makes it difficult to believe that less than a century ago it was lined by some of the largest reduction establishments on the Comstock, which filled the canyon with the thunderous noise of their operations. Some foundations and rubble remain at a few of the mill sites. Apparently a very destructive flood in 1907 destroyed many of the mills and their dams. Since then the elements and vandalism have taken their toll.

Mexican Mill: Large mill built in 1861 on the Mexican Ditch about 1/2 mile west of Empire City. Water to run the mill was obtained from the Mexican Dam on the Carson River approximately four miles to the south. The water was conveyed from the dam through the Mexican Ditch to the mill. Originally the mill was known as the Silver State Reduction

Works; it was also called the Spanish Quartz Mill. In 1863 it had the largest water wheel on the Pacific coast, furnishing almost 200 horsepower and 44 stamps. Kelly wrote that its capacity was 70-75 tons "being more than double the amount crushed by any other mill in the Territory." At that time it was processing ore from the Mexican Mine in Virginia City and other mines. Its crushing and amalgamating plant was contained in a building 90 x 186 feet. The total length of the entire mill was approximately 450 feet. In the 1866 *State Mineralogist's Report* it was listed as having 44 stamps, 12 Hepburn pans, and a 75-ton capacity. In the early 1870s it had 44 stamps, 20 pans, 10 settlers, and a 120-ton capacity. It was reported still to be operating in the 1880s. Today the Mexican Dam and Ditch are still intact and are being used for irrigation. The mill site contains extensive ruins, and the mill office and superintendent's home are well-preserved (Apple Tree, 1975, Dec. 14, 2; Carlson, 1974, 166; Comp, 1980; Kelly, 1863, 88-91; Ormsby County Land Records, 1864, v. 7, 124; SMR, 1866, 150; 1871-72,117).

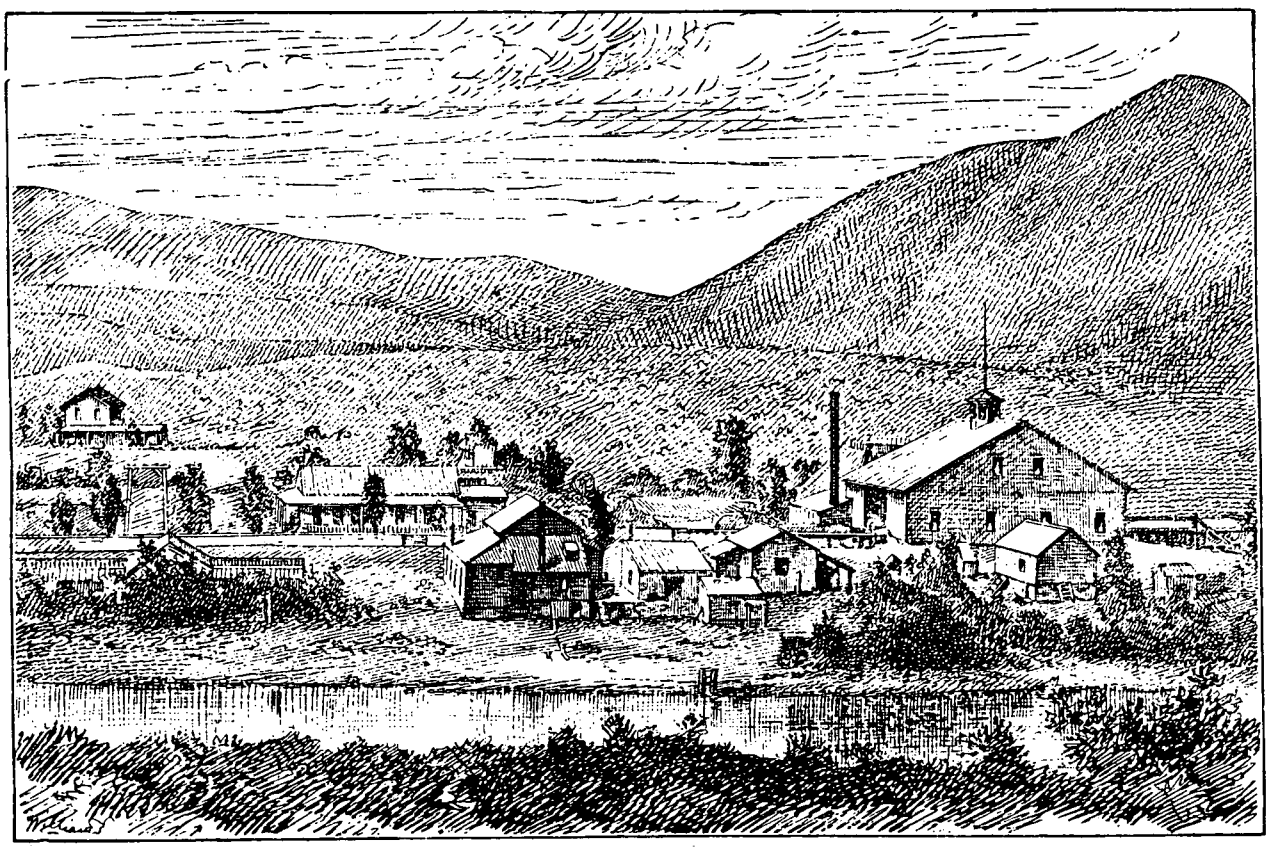
Meads Mill: Empire City quartz mill built in 1861 between the Mexican Mill and the Carson River. It was described as having 16 stamps, 10 stone pans, a main building 46 x 56 feet, a capacity of 20 tons per day, and 12 employees; it cost approximately $25,000 and was powered by water from the Mexican Ditch. According to Dodson, it was built by W. H. Mead and was later known as the Yellow Jacket Mill (Angel, 1881, 540; Dangberg, 1975, 297; Dodson, 1928; Lawson, 1861, manuscript map).

Baldwin & Co.'s Mill: Kelly's 1863 directory reported this to be a 16-stamp mill located in Empire City. It had a 25 horsepower engine, 20 pans in the amalgamating department, and 14 employees. Joseph Baldwin Jr. was the mill's superintendent (Kelly, 1863, 91).

Morgan Mill: Sizeable mill located on the north bank of the Carson River about 1/8 mile east of Empire City. It was constructed in the mid-1860s to reduce ore from the Yellow Jacket Mine in Gold Hill and was earlier known as the Yellow Jacket Mill. In the 1866 *State Mineralogist's Report* it was listed as a steam and water-powered mill with 40 stamps, 9 Varney and 30 Hepburn pans, and a capacity of 80 tons a day. In the early 1870s it was reported to be a steam mill with 40 stamps, 13 pans, 6 settlers, and a 75-ton capacity. It was reported to be operating as a tailings mill in the early 1880s and still to be operating in the late 1880s (Comp, 1980; Dangberg, 1975, 295; SMR, 1866, 150; 1871-72, 117; TE, 1871, July 27, 3:1; Wheeler, 1876-77, map).

Brunswick Mill: Large reduction establishment located on the north bank of the Carson River approximately one mile east of Empire City. It was one of the major mills on the Carson River and was constructed in 1864. In 1866 it was described as a water-powered mill with 8 stamps, 4 Knox and 1 Varney pans, and a 20-ton-a-day capacity. In the early 1870s it had 56 stamps, 26 pans, 13 settlers, and a capacity of 150 tons a day. In 1875 its ownership was transferred to the Pacific Mill & Mining Co., which was controlled by the Bonanza Firm of Mackay, Fair, Flood, and O'Brien, to process ore from the Consolidated Virginia Mine in Virginia City. The mill was reported to still be operating in the late 1880s. Extensive stone foundations remain at the site (Comp, 1980; Dangberg, 1975, 300-09; SMR, 1866, 150; 1871-72, 117; TE, 1875, Oct. 1, 3:2; Wheeler, 1876-77, map).

Merrimac Mill: Was located on the Carson River approximately 1/2 mile below the Brunswick Mill and about two miles below Empire City. It was also known as the Bryant, Ellsworth, & Co. Mill. In Kelly's 1863 directory it was reported to have a main building measuring 70 x 100 and one of the most substantial dams on the Carson River. It employed 17 persons, ran 16 stamps and 18 pans, crushed 30 tons of rock a day, and cost about $50,000. In the 1866 *State Mineralogist's Report* it was listed as water-powered with 20 stamps, 15 Wheeler pans, and a 40-ton capacity. In the early 1870s it was reported to have 20 stamps, 13 pans, 6 settlers, and a 45-ton capacity. The Merrimac Dam was reported to



MERRIMAC MILL, CARSON RIVER.

Merrimac Mill (De Quille, p. 233).

be the best dam on the Carson River. It was constructed of stone and cost about $30,000. A 2,000-foot long ditch was constructed to carry water to the mill. The ditch was completed in 1861 and was 14 feet wide at the top, 10 feet wide at the bottom, and 3 feet deep. The mill was dismantled in the early 1890s, and in 1907 a flood destroyed the dam (Bancroft, 1862, map; Dangberg, 1975, 310-18; Kelly, 1863, 91; Nevada Historical Society, Carson City Sites Survey; SMR, 1866, 150; 1871-72, 117).

Copper Canyon Mill: Small quartz mill on the Carson River about one mile below the Merrimac Mill. It was constructed in 1862, was powered by water from a 600-foot ditch, and had 10 stamps with a 15-ton-a-day capacity. It cost approximately $15,000, and its main building measured about 40 x 60 (Angel, 1881, 540; Nevada Historical Society, Carson City Sites Survey).

Blue Canyon Mill: Bancroft's 1862 map showed this mill to be located on the Carson River between the Merrimac and Vivian mills. Possibly it was the same as the Copper Canyon Mill (Bancroft, 1862, map).

Vivian Mill: This Carson River reduction facility was located on the river approximately two miles below the Merrimac Mill and a short distance below the Copper Canyon Mill. It was erected in the early 1860s and Kelly's 1863 directory reported it to have 16 stamps, 8 Wheeler pans, 3 agitators, a 25-ton-a-day capacity, and a very substantial stone dam. It was powered by water brought from the Carson River through a 1,100-foot long ditch and flume. In 1866 it was listed as being steam and water-powered, having 16 stamps and 8 Wheeler pans, and crushing 30 tons a day. In the early 1870s it was reported to have the same number of stamps and pans as in 1866, and to possess 7 settlers and a 40-ton capacity. The mill is reported to have operated until the 1890s (Angel, 1881, 540; Bancroft, 1862, map; Comp, 1980; Dangberg, 1975, 318-21; Kelly, 1863, 91-92; SMR, 1866, 150; 1871-72, 117).

Santiago Mill: Medium-sized mill located on the Carson River between the Vivian and Eureka mills approximately three miles east of Empire City. It was earlier known as the Stewart & Hennings Mill and the Zephyr Flat Mill. It was built in the early 1860s by William M. Stewart, well-known Virginia City mining lawyer later to become United States Senator from Nevada; John Henning; James Morgan; and C. F. Wood. In 1863 it was described as having one of the largest water wheels in the Territory, being 7 feet in diameter and weighing 7,000 pounds. At that time its main building was 60 x 160 feet; and it had 16 stamps, a 30-ton capacity, and employed 16 men. Kelly called it "one of the most complete and well-constructed establishments in the country." In the early 1870s it was reported to have 34 stamps, 9 pans, 18 settlers, and a capacity of 80 tons. It was still operating in the 1880s (Comp, 1980; Kelly, 1863, 92; Marsh, 1972, 689; Nevada Historical Society, 1966, 8; Nevada State Journal, 1960, Aug. 14, 30:1; SMR, 1866, 150; 1871-72, 117).

Chapter 14

CARSON RIVER MILLS - DAYTON VICINITY

The Town of Dayton

This Carson River town is located in western Lyon County on U.S. Highway 50 approximately nine miles northeast of Carson City and about eight miles southeast of Virginia City. Unlike the other Comstock towns discussed earlier, with the exception of Empire City, Dayton did not possess any Comstock mines but instead, because of its position on the Carson River, was an important Comstock quartz milling center.

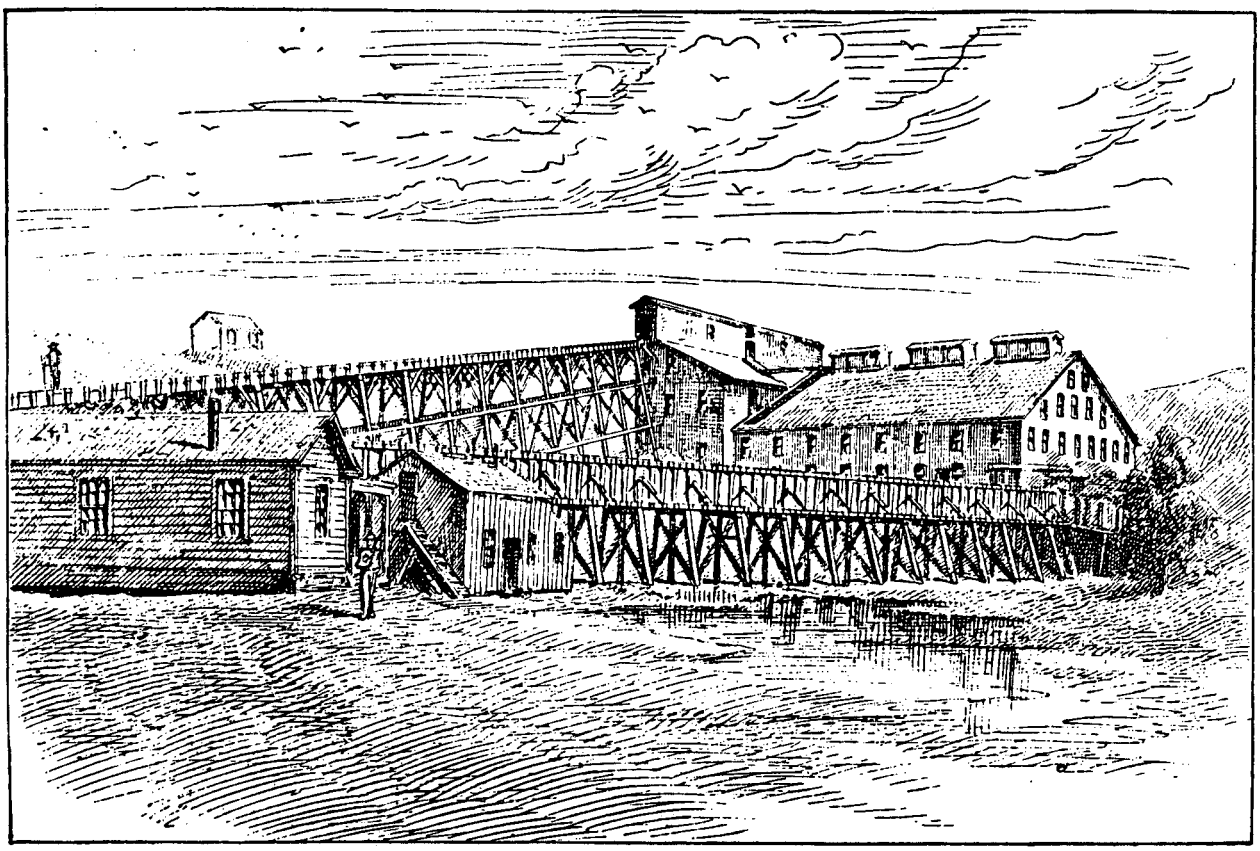
As early as 1849 a tent trading post was erected in the vicinity of modern-day Dayton to serve immigrants and miners. Sometime in the early 1850s a permanent structure was built and by 1856-59 a number of Chinese had settled in the area. At that time the hamlet was appropriately known as Chinatown and continued to be known by that name until 1861 when there was an abortive attempt to call the settlement Nevada City. After the discovery of the Comstock, Chinatown was almost deserted; even wood houses were dismantled and moved to Virginia City and Gold Hill, leaving the town reduced to five or six houses. In 1860 a company, composed mostly of Carson City residents, proceeded to lay out a town called Mineral Rapids on the river immediately below Dayton, but the proposed town never prospered.

By the fall of 1860 mill construction on the Carson River was on the increase, giving new life to Chinatown. The town was named Dayton in 1861. The name honors John Day, a surveyor who was passing through and agreed to plot the town on the condition that it be named for him. Day was elected Surveyor General of Nevada in the late 1860s and early 1870s. Also in 1861, Dayton became the county seat of Lyon County. Carson River milling boomed, and in the mid-1860s the town's population peaked at about 2,500. In 1865 Dayton was reported to have 7 hotels, 5 saloons, 3 grocery stores, 1 brewery, 3 lumber yards, 5 carpenters, a military company numbering about 84, and a school house. After 1865 until the early 1870s there was a recession in Comstock mining, causing Dayton's population to decrease. During the height of milling in the early 1870s Dayton and vicinity were reported to have 11 mills with a total of 185 stamps. At that time the town's population was about 1,500. Dayton's next decline began in 1878 along with the rest of the Comstock. In 1880 its population was about 200. The coming of the Carson & Colorado Railroad in the early 1880s did not stimulate the town until the early 1900s when there was increased mining activity in southern Nevada, causing Dayton's population to grown to approximately 700. In 1909 fire destroyed the courthouse, and two years later the county seat was moved to Yerington.

Modern Dayton is a small picturesque residential community with several historic buildings remaining. Dayton township's population increased from 1,470 in 1970 to 3,315 in 1980 (Angel, 1881, 494-500; Carlson, 1974, 93; Kelly, 1862, 213-15; Paher, 1970, 69; SMR, 1871-72, 98-100).

The Lyon County-Carson River Mills

Eureka Mill: One of the largest mills on the river, this facility was located about one mile below the Santiago Mill and approximately three miles above Dayton. Kelly's 1862 directory described it as having a dam 125 feet wide and a main building 75 x 80, which was erected in 1861. At that time it had 20 stamps, 4 arastras, 25 employees, and a 30-ton-a-day capacity. The *Gold Hill News* reported in 1865 that it was a water-powered mill with 20 stamps, 10 pans, a 20-ton capacity, and 11 employees and was milling ore from the Yellow Jacket Mine in Gold Hill. Apparently the mill was taken over by the Union Mill & Mining Co., of which William Sharon was president, in 1871 and was rebuilt as the New Eureka Mill. In 1871 the *Territorial Enterprise* reported that the Union Mill Co. was building a large



THE EUREKA MILL—CARSON RIVER.

The Eureka Mill (De Quille, p. 67).

dam, flume, and mill near the site of the old Eureka Mill. The dam was described as 200 feet in length, constructed of timbers 14 inches square, and 24 feet 8 inches high. The flume was to be 4,200 feet long. The mill was to measure 120 x 180 feet and 75 feet high and to have 60 stamps with a 180 to 200-ton capacity. The *Territorial Enterprise* went on to say that "it is intended that the mill shall be not only the largest but the best in the world -- the model mill of the universe." Its estimated cost was $200,000. In 1875 the *Territorial Enterprise* wrote that it was the largest and finest mill in the state and that it was reducing 32 carloads of Belcher Mine ore a day. Grace Dangberg reports that the mill was destroyed by fire in the early 1890s. Later the Eureka Cyanide Plant was built near the site (Comp, 1980; Dangberg, 1975, 328-38, photos; GHN, 1865, June 5, 3:2; Kelly, 1862, 216; SMR, 1871-72, 100; TE 1871, Aug. 19, 3:1; 1875, Jan. 10, 3:2; Wheeler, 1876-77, map).

San Francisco Mill: Small Carson River reduction facility located west of Dayton between the Eureka and Franklin mills. Kelly's 1862 directory showed that it had a main building measuring 50 x 69 feet, 20 stamps, a 20-ton capacity, and 10 employees. In 1865 it was both water and steam-powered, used 1 cord of wood a day, had 10 stamps and 3 pans, employed 10, and processed 14 tons of ore a day from the Yellow Jacket Mine in Gold HIll. In the 1869-70 *State Mineralogist's Report*, it was listed as having 10 stamps and 8 pans (Bancroft, 1862, map; GHN, 1865, June 5, 3:2; Kelly, 1862, 216; SMR, 1869-70, 15).

Franklin Mill: Small Carson River mill located on the north bank of the river approximately two miles above Dayton at a point nearly opposite the Daney Mine. In Kelly's 1862 directory this establishment was described as having a 30 x 60-foot main building, a stone dam 20 feet wide at the bottom and 10 feet wide at the top, 10 stamps, 2 arastras, and a crushing capacity of 20 tons a day. At that time it employed 15 and was running on ore from the Daney Mine; the cost of the dam, road and mill was approximately $60,000. In 1865 it was reported to be running on both water and steam, to use one cord of wood per week, to have 10 stamps and 9 tubs and pans, to employ 10 men, and to be reducing 12 tons of Yellow Jacket ore per day. In 1868 it was owned by the Bank of California, which was controlled by William Sharon, and in the early 1870s it was listed as having 20 stamps and a 40-ton capacity (GHN, 1865, June 5, 3:2; Kelly, 1862, 216-17; SMR, 1871-72, 100; TE, 1868, Jan. 21, 1:2; Wheeler, 1876-77, map).

Island Mill: Another small Carson River mill which was located a short distance below the Franklin Mill. In 1865 it was reported to be water-powered, to have 10 stamps and 11 tubs and pans, to use 3 cords of wood per week, and to be reducing 19 tons of ore per day from the Savage Mine in Virginia City. In 1868 it was listed as being owned by the Bank of California, which was controlled by William Sharon. The 1871-72 *State Mineralogist's Report* showed it to have 20 stamps and a 20-ton capacity but to be idle (GHN, 1865, June 5, 3:2; SMR, 1871-72, 100; TE, 1868, Jan. 21, 1:2).

Barton & Co.'s Mill: Tiny mill shown on Bancroft's 1862 map as located on the east bank of the Carson River above Dayton between the Franklin and Sprouls mills. Kelly's 1862 directory listed J.N. Barton, John Barton, J.R. Brett, and Levi Hite as owners. At that time it had 4 arastras with an 8-ton-a-day capacity and employed 7 men; it was processing ore from the proprietors' Gold Hill claim (Bancroft, 1862, map; Kelly, 1862, 217-18).

Hastings & Woodworth Mill: This mill had the distinction of being the first water-powered mill to be built on the Comstock. Both it and the Logan & Holmes Mill in Chinatown (Dayton) were reported to have started up in the fall of 1859; the Logan & Holmes Mill was run by horses. This mill was located on the river approximately 1 1/2 miles above Chinatown (Dayton) on the same site which was later occupied by the Carson River Quartz Mill (Kelly, 1862, 218).

Carson River Quartz Mill: Kelly's 1862 directory reported this mill to be located above Dayton on the Carson River at a site known as Camp Woodworth. The mill's proprietors were Joseph Woodworth, William M. Stewart and John D. Winters. At that time it had 10 stamps, 4 large arastras, and 10 employees and was crushing ore at a rate of 20 tons a day from the proprietors' claim in Gold Hill, known as the Henderson claim. Kelly went on to say that with its several out buildings, the mill give the appearance of being a hamlet. One of the first mills on the Comstock, the Hastings & Woodworth Mill, was earlier located on the same site. Later the New Ophir Mill was built on the same site (Comp, 1980; Kelly, 1862, 218).

Ophir Mills: Two mills which were situated on the Carson River above Dayton and below the Island Mill. In 1865 the New Ophir Mill was listed as being owned by the Ophir Mining Co. of Virginia City, as having 24 stamps and 15 pans, burning 4 cords of wood per week, employing 15 men, and reducing 35 tons of Yellow Jacket ore a day. It was built on the site of the Carson River Quartz Mill. In 1866 it was listed as being powered by steam and water, as using 2 1/2 cords of wood a day, and as having the same number of stamps and pans and same capacity as in 1865. The 1875 map of the survey of the Virginia & El Dorado Railroad shows an Old Ophir Mill located above the New Ophir Mill. In 1868 the New Ophir Mill was owned by William Sharon's Bank of California. It operated as a tailings mill from 1873-1883, at which time it was owned by Fair and Mackay (Comp, 1980; GHN, 1865, June 5, 3:2; Map of Survey of the Virginia & El Dorado Narrow Gauge Railroad, 1875; SMR, 1866, TE, 1868, Jan. 21, 1:2).

Woodworth Mill: Shown on Wheeler's 1876-77 map as situated on the northwest bank of the Carson River approximately one mile above Dayton. The 1869-70 *State Mineralogist's Report* reported it to be a 24-stamp mill with 12 pans, and in the early 1870s it was listed as having the same number of stamps and a 48-ton capacity (SMR, 1869-70, 15; 1871-72, 100; Wheeler, 1876-77, map).

Sprouls Mill: Small Carson River mill which was located above Dayton between the Barton & Co. and Carson River Quartz mills. In Kelly's 1862 directory it was listed as Sproul & Co.'s Excelsior Mill and reported to have 10 stamps and 20 Hungarian pans, to employ 15 men, and to process ore from the proprietors' Gold Hill claim. The proprietors were J.R. Sproul, C.C. Goodwin, Levi Hite, and J.R. Brett. The mill and dam cost approximately $5,000 (Bancroft, 1862, map; Kelly, 1862, 218).

Birdsall & Carpenter Mill: Dayton mill reported in 1865 to have 20 stamps and 10 pans, to burn 1 cord of wood a day, to reduce 30 tons a day, and to employ 10 men. In the 1866 *State Mineralogist's Report* it was listed as a water-powered mill using 2 cords of wood a day and having 30 stamps, 20 Wheeler pans, and a capacity of 55 tons a day. In the 1869-70 *State Mineralogist's Report* it was reported to have 30 stamps and 40 pans, and in the early 1870s it had been converted to a tailings mill with a capacity of 300 tons per day. The buildings were torn down in the early 1900s (Comp, 1980; GHN, 1865, June 5, 3:2; SMR, 1866, 149; 1869-70, 14; 1871-72, 100).

Sutro Mill: When Adolph Sutro, later of Sutro Tunnel fame, first settled on the Comstock, he operated this mill, which was located slightly below Dayton between the Solomon Davis and Old Dayton mills. It was erected in 1861 and was one of the early mills in the area. Kelly's 1862 directory reported it to have 10 stamps and a 12-ton-a-day capacity and to employ 10 men. At that time it was processing ore from the Gould & Curry Mine in Virginia City. The mill burned in 1863, and it was rumored that the fire had been deliberately set in order to collect the insurance. An account in the *Territorial Enterprise* in 1874 relates that Sutro never was indicted for arson in Lyon County even though there was a Grand Jury investigation at the time. One man died in the fire, and the property was

heavily insured, causing people to speculate that the fire was not accidental. The *Territorial Enterprise* went on to say, "Nor can we believe with our correspondent that the evidence of incendiarism before the Grand Jury was strong enough to have warranted the finding of a bill. Justice to Mr. Sutro compels to say that we do not believe him to be capable of any such act, no matter what may have been charged at the time" (Bancroft, 1862, map; Kelly, 1862, 219; TE, 1874, May 14, 2:1).

Dayton Mills: There were two Dayton Mills, the Old Dayton Mill and the New Dayton Mill, located in Dayton. Kelly's 1862 directory reported the (Old) Dayton Mill to be located between the Sutro and Mineral Rapids mills at the lower end of Dayton. At that time it had 15 stamps with a 15-ton-a-day capacity and employed 6 men. In 1865 it was reported to be water-powered, burning 1 cord of wood per week, and running 20 stamps and 6 pans. The New Dayton Mill was listed in 1865 as a 15-stamp, steam mill consuming 5-1/2 cords of wood a day, having 8 pans for amalgamation, and processing 22 tons of ore a day from the Winters Mine. In the 1866 *State Mineralogist's Report* the Dayton Mill No. 1 (Old Dayton Mill) was listed as having the same number of stamps and pans as in 1865 and as having a 20-ton capacity. The Dayton Mill No. 2 was listed as possessing the same number of stamps as in 1865 but as having a 15-ton capacity (GHN, 1865, June 5, 3:1; Kelly, 1862, 219-20; SMR, 1866, 149).

The following small mills were reported to be located in Dayton. The *Gold Hill News* in 1864 wrote of a **Jackson & Hunts Mill,** which had 5 new Helson pans. The article went on to say that "this mill has made itself famous for the large yield of ore reduced in it." In 1865 the *Gold Hill News* reported that **Sweetapples Mill** was a water and steam-powered facility with 12 stamps reducing ore from the Gold Hill and Savage mines. The listing of the **Kustel & Winters Mill** on Bancroft's 1862 map was the only information found on this mill; it appears to have been owned by John D. Winters, Joseph D. Winters and G. Kustel. Wheeler's 1876-77 map showed a **Lyon Mill** located on the west bank of the Carson River in Dayton; no additional information was found on this mill. In 1868 the *Territorial Enterprise* reported the **Mosheimer Mill** to be a 15-stamp, steam mill. In the same article the *Territorial Enterprise* wrote that the **Reservoir Mill** was a steam mill with 5 pans; in the early 1870s it was listed as a tailings mill with a 50-ton-a-day capacity. According to Myron Angel, the **Solomon Davis Mill** was assembled in 1861 after being moved from California. Because it was capable only of processing free gold, it was unsuccessful and was moved to Como in Lyon County and later to the Kearsage District. Kelly's 1862 directory listed **Keller & Co.'s Mill** as having a 60 x 70-foot main building, 15 stamps, 4 arastras, a 20-ton capacity, and 8 employees. Its proprietors were Joseph Keller and Issac Cohen, and Bancroft's 1862 map showed it located between the Kustel & Winters and Solomon Davis mills. The same directory listed the **Solomon & Jacobs Mill** as located below Keller & Co.'s Mill; it was described as a steam mill with 10 arastras and 10 employees (Angel, 1881, 502; Bancroft, 1862, map; GHN, 1864, May 25, 3:2; 1865, Apr. 4, 3:1; Kelly, 1862, 219; SMR, 1871-72, 100; TE, 1868, Jan. 21, 1:2; Wheeler, 1876-77, map).

Logan & Holmes Mill: Some reports credit this tiny mill with being the first to be erected on the Comstock. Kelly credits the Hastings & Woodworth Mill, covered earlier in this chapter, as being the first. Apparently both the Logan & Holmes and Hastings & Woodworth mills started up in the fall of 1859. The Coover & Harris and Pioneer mills, the first steam mills on the Comstock, went into operation almost a year later. Messrs. Logan and Holmes built their mill on a flat about 1/4 mile south of Dayton. It was a 4-stamp mill driven by horses and was reported to be an experimental mill for testing Gold Hill ore. It was replaced by a water-powered mill (the Aurora Mill) the following summer (Angel, 1881, 503; Kelly, 1862, 214, 218-19).

Aurora Mill: Reported in 1862 to be owned by J. Mosheimer, John D. Winters, Joseph D. Winters, and G. Kustel and to be located 1/4 mile south of Dayton. At that time it had 38 stamps, 40 employees, and a 40-ton capacity; it was driven by 2 turbine wheels of 30 horsepower each. Earlier the Logan & Holmes Mill occupied the same site (Kelly, 1862, 218-19).

Mineral Rapids Mill: Small mill located on the Carson River below Dayton between the Dayton and Rock Point mills. In 1862 it was reported to have a 40 horsepower steam engine, 10 stamps, and 4 arastras; to work both gold and silver; and to reduce 20 tons in 24 hours. In 1865 it had 10 stamps and 14 pans, burned 3 cords of wood a day, and employed 13. It was named for the settlement of Mineral Rapids, which was laid out in 1860 on the river immediately below Chinatown (Dayton) but never thrived (Bancroft, 1862, map; GHN, 1865, June 5, 3:2; Kelly, 1862, 220).

Illinois Mill: Was located on the Carson River above the Rock Point Mill and about 1/4 mile below Dayton. In 1865 it was listed as a steam mill with 20 stamps and 5 pans, using 5 cords of wood a day, employing 14 men, and crushing 18 tons a day from the Yellow Jacket Mine in Gold Hill. In 1868 it was reported to be owned by the Bank of California, which was controlled by William Sharon. The 1869-70 *State Mineralogist's Report* listed it as a 20-stamp and 6-pan mill (GHN, 1865, June 5, 3:2; SMR, 1869-70, 15; TE, 1868, Jan. 21, 1:2).

Rock Point Mill: A Dayton State Park historical marker points out the ruins of this major mill on the west side of U.S. Highway 50 on the outskirts of Dayton. The mill was located below Dayton between the Mineral Rapids and Freeborn & Sheldon mills. In 1862 Kelly described it as "one of the most extensive establishments in the country," having a 90 x 100-foot main building, a 100 horsepower engine, 42 stamps, and a dam and race that cost approximately $10,000. At that time 30 men were employed; the mill's reduction capacity was 50 tons a day; and it was processing ore from the Logan & Holmes Mine in Gold Hill. In 1865 it was reported to be owned by the Imperial Mining & Mill Co. In the 1866 *State Mineralogist's Report* it was listed as being steam and water-powered, burning 2 1/2 cords of wood per day, having 56 stamps and 50 pans, and crushing 56 tons a day. In the early 1870s it had 56 stamps and a 112-ton capacity but was not operating. According to the Dayton State Park historical marker at the site, the mill was destroyed by fire in 1882 and was rebuilt in 1883. Again in 1909 it was destroyed by fire and was rebuilt in 1912 by the Nevada Mining, Reduction & Power Co. with an aerial tramway carrying ore from the Haywood Mine near Silver City. A few years later the tramway was abandoned (Bancroft, 1862, map; GHN, 1865, June 5, 3:1; Kelly, 1862, 220-21; Smith, 1932, 13; SMR, 1866, 148; 1871-72, 100).

Freeborn & Sheldons Mill: Carson River mill located below Dayton between the Rock Point and Gautiers mills; it was originally known as Shaws Mill. Shaws Mill never became operative because the Rock Point Co. claimed and succeeded in holding the water with which the Shaw Co. expected to operate its mill. In 1862 Freeborn & Sheldons Mill was described as having a main building 75 feet square, a turbine wheel 5 feet in diameter and weighing 5,000 pounds, 24 stamps, and a 30-ton capacity; as employing 15, and as having cost approximately $40,000 (Angel, 1881, 503; Bancroft, 1862, map; Kelly, 1862, 221).

Gautiers Mill: Early reduction facility shown on Bancroft's map as located on the east side of the Carson River below Dayton between the Freeborn & Sheldon and Succor mills. Kelly's 1862 directory reported it to have 10 stamps and a 15-ton capacity and to employ 8 (Bancroft, 1862, map; Kelly, 1862, 221).

Succor Mill: This mill originally stood approximately 1 1/2 miles below Dayton between the Gautiers and Frothinghams mills. When winter flooding changed the river's channel in the early 1860s, the mill's frame was moved to Gold Canyon about 1/2 mile northwest of Devils Gate where it continued to operate under the same name (see Chapter 11 for additional information) (Bancroft, 1862, map; Kelly, 1863, 313).

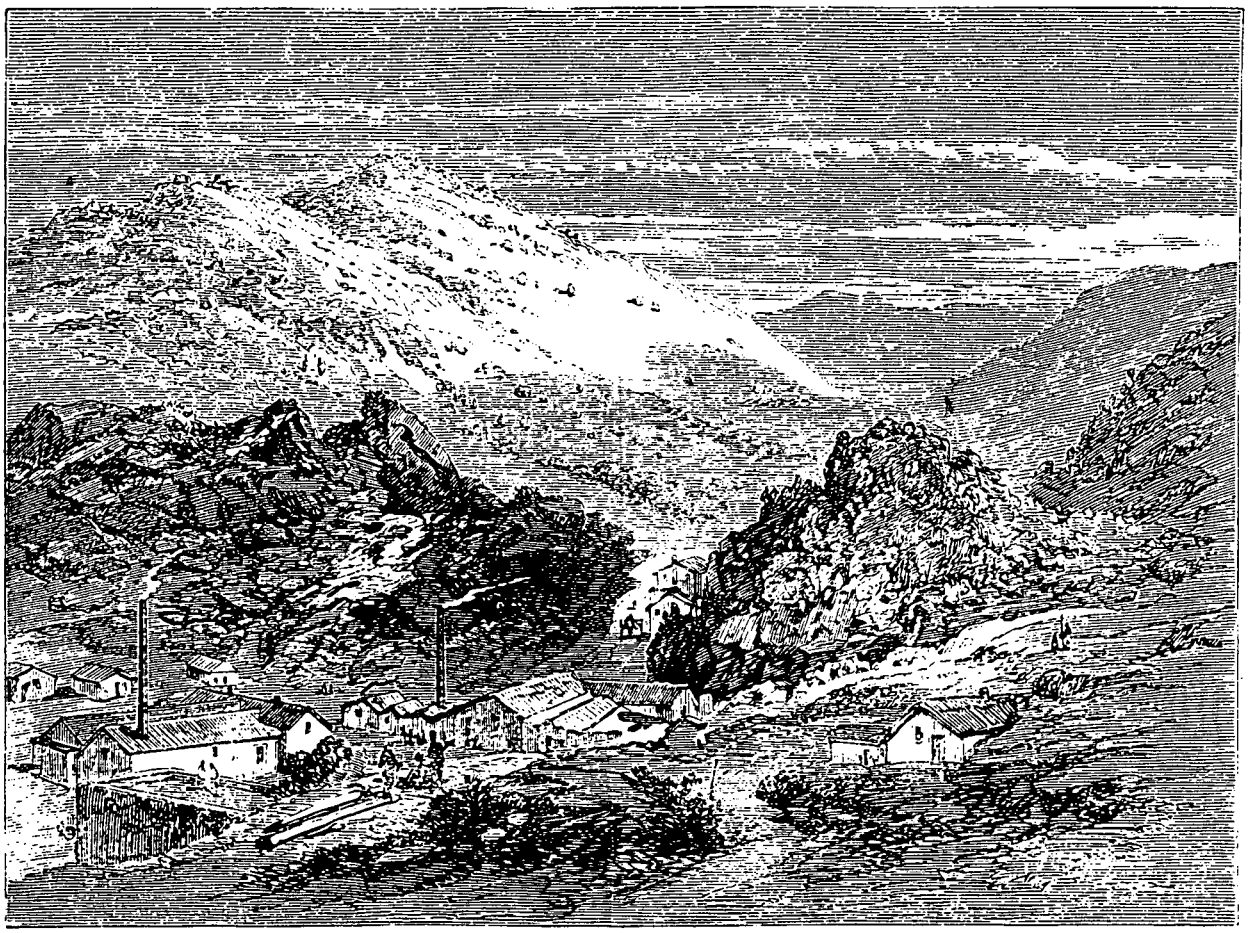
Frothingham & Co.'s Mill: Small mill located on the river approximately four miles below Dayton. In 1862 it had 3 stamps, 4 arastras, and an 8-ton capacity (Bancroft, 1862, map; Kelly, 1862, 222).

Desert Mill: Small tailings mill which was situated on the Carson River about 4 miles below Dayton. In the 1871-72 *State Mineralogist's Report* it was listed as having a 25-ton-a-day capacity. In 1873 it was reported to be processing 30 tons of tailings a day (SMR, 1871-72, 100; TE, 1873, Apr. 2, 3:1).

Carson Valley Mill: Large tailings mill located on the Carson River about 5 miles below Dayton near Sixmile Canyon. The 1869-70 *State Mineralogist's Report* listed it as having 20 stamps and 10 pans. In 1871 the *Territorial Enterprise* reported that a tailings mill was being erected on the site with a 60 x 150-foot main building, 10 Parke pans, and a 500-ton-a-day capacity (SMR, 1869-70, 14; 1871-72, 100; TE, 1871, June 8, 3:1).

Lindauer & Co. Mill: Reported in 1865 to be water-powered, to have 15 stamps and 10 pans, to burn one cord of wood per week, to employ 9 men, and to crush 20 tons a day from the Gold Hill Consolidated Mine. At that time Lindauer, Hirshman, and Sweetapple were proprietors. It was also known as the Lindauer & Hirshman Mill. In 1866 the *Territorial Enterprise* reported it to be operating exclusively as a tailings mill, getting much of its supply of tailings from the Rock Point Mill. The 1866 *State Mineralogist's Report* showed the mill to be dismantled. No exact location was given for this mill (GHN, 1865, June 5, 3:2; SMR, 1866, 149; TE, 1866, Aug. 22, 1:4).

Hurds Mill: Reported by the *Territorial Enterprise* in 1868 to be located on the Carson River south of Dayton, to be owned by Hurd, Ball & Co., to be water-powered, and to have 20 stamps and 8 pans; no exact location was given (TE, 1868, Jan. 21, 1:2).



SKETCHES FROM THE WASHOE SILVER REGION, NORTH AMERICA : DEVIL'S GATE, AND THE CRUSHING-MILLS AT THE NORTH END OF SILVER CITY.

Devils Gate and ore mills at Silver City (*The Illustrated London News*, March 8, 1862, p. 262).

Chapter 15

WASHOE VALLEY MILLS

Washoe Valley is located about seven miles due west of Virginia City and Gold Hill across the rugged Virginia Range. In the early days of the Comstock, this valley played an important role in the reduction of the Comstock ores. The Ophir Mill, located near Washoe City in a settlement called Ophir, was the valley's largest and best known mill, but there were at least nine other valley mills reducing Comstock ore in the early 1860s.

A description of the Washoe Valley mills will follow a brief history and description of Washoe Valley, Washoe City, Ophir and Ophir Grade.

Washoe Valley and the Name of Washoe

This lush valley is situated in extreme southern Washoe County and is bounded by Pleasant Valley on the north, Eagle Valley on the south, the Virginia Range dividing it from Virginia City and Gold Hill on the east, and the Carson Range of the Sierra Nevada on the west. The valley covers an area of approximately 45-50 square miles, and Washoe Lake covers about six square miles almost in the middle of the valley. U.S. Highway 395 between Reno and Carson City traverses the west side of the valley. Modern Washoe Valley presents a combination rural-residential setting with a fairly large concentration of population on the east side of Washoe Lake in New Washoe City, another cluster of population on the west side of the valley in the Franktown Road area, and the rest in ranch land. Seeing Washoe Valley today makes it difficult to believe that it was ever a quartz and lumber milling center, an important part of the Comstock, and the site of the Washoe County seat.

The name "Washoe" has quite an interesting history behind it. This popular Indian name has been given to a county, lake, mountain range, valley, mining district, and town in western Nevada. With the discovery of the Comstock, a large area of western Utah Territory on and beyond the eastern slope of the Sierra Nevada, which had previously been known as the Eastern Slope, became known as Washoe. In the early 1860s there was a strong movement to call the new territory and later the new state Washoe rather than Nevada. The original spelling was Wassau which through further Anglicization became Washoe. Variant spellings include Washo, Washoo, Washiu and Wassou. The name is usually attributed to be that of an Indian tribe that inhabited the area. Various meanings, including "person," "to wash," "rye grass," or "tall bunch grass," have been attributed to the name.

In recent research Alvin McLane discovered the following statement on page 5 of *The Case of George Chorpenning vs. The United States...*, Washington, D.C., May 1, 1874: M'Gill & Witherow Printers and Stereotypers, Washington, D.C.:

> "The land to which I (Chorpenning) then made claim now contains the town of Genoa. When I settled in that valley (in 1851) I met an old Indian, known among his people as 'Captain Washoe,' who with his band, comprising sixty or seventy warriors, occupied a valley some 25 miles north of me. To this valley we naturally gave the name of Washoe's or Washoe Valley, from which the now famous mines of that vicinity derived their name." (Carlson, 1974, 242; McLane, 1981, 14-15; Ohmert, 1911, 94).

Washoe City and Ophir City

The historic town site of Washoe City is located on U.S. Highway 395 approximately 18 miles south of Reno and about 10 miles from Virginia City via Ophir Grade across the Virginia Range. Washoe City was established north of Washoe Lake in 1861 out of Virginia City's need for lumber and water power to run its mills. It soon became a commercial center for nearby quartz mills, saw mills and farms. When Washoe County was established

in 1861, Washoe City was the largest town in the county and became the county seat. The first court house quarters were rented, but plans were soon made to build a court house and jail; they were completed by the end of 1863.

By the mid-1860s Washoe City had a floating population of approximately 6,000 with less than half as many permanent residents. At that time there were eight quartz mills in the area with a total of 181 stamps. Lumbering and milling started to decline as early as 1863 because of the difficult passage over Ophir Grade to Virginia City, which could be impassable for two to three months in the winter. It was easier for the Comstock to obtain its lumber from the timber that was floated down the Carson River and also more convenient to have ore reduced at the Carson River mills or on the Comstock. The completion in 1869 of the Virginia & Truckee Railroad from Virginia City to Empire City and Carson City was a serious blow to Washoe City. The loss of the county seat to Reno in 1871 was the death knell for the town. In 1880 its population had dwindled to about 200, and its post office closed in 1894. Now nothing remains of this once-prosperous town except a few crumbling foundations.

The camp of Ophir City was located about 1/4 mile east of U.S. Highway 395 at a point approximately 20 miles south of Reno and about two miles south of Washoe City. The settlement grew up around the Ophir Mill and had about 300 residents in 1862-63. In addition to ore milling, Ophir City thrived due to extensive shipping of cordwood. The town's businesses included saloons, a post office which opened in 1861, lawyers' offices, and wagon and blacksmith shops. The decline of the Ophir Mill in the mid-1860s spelled the end of the town. In 1871 only about 41 voters were left, and the post office was removed that same year. The mill was dismantled in 1872 (Angel, 1881, 625-27; Paher, 1970, 43; SMR, 1866, 150).

Ophir Grade

This was the name given to the early toll road that provided the vital link between Virginia City and Washoe Valley. Galloway described it as follows:

> "After passing the Divide between Virginia City and Gold Hill, the Ophir Grade skirted the southern flanks of Mt. Davidson and descended 1,200 feet to Washoe Lake, where the swampy ground at the north end of the lake was crossed by a timber trestle about a mile long. Ore was transported by the teams down the grade and lumber and wood taken on the return trip."

The road was built in 1861 by the Ophir Mining Co. to connect its mine in Virginia City with its Ophir Mill in Washoe Valley and was known for a short time as the Washoe City-Virginia City Toll Road. Today the major portion of the route remains intact as a roughly graded dirt road. The road was continuous from Virginia City to Washoe Lake until 1979 when a slide occurred at Houston International Minerals Corp.'s Con Imperial Pit in Gold Hill, resulting in the destruction of the road at that point (Comp, 1980; Galloway, 1947, 35).

Washoe Valley Mills

The Ophir Mill, which was the valley's largest, will be discussed first, followed by a description of the Washoe City mills and outlying mills.

Ophir Mill: In the early 1860s this was the largest quartz mill on the Comstock. It was located at Ophir City, and according to Kelly's 1863 directory its buildings covered approximately three acres. The mill and adjoining buildings were built by the Ophir Mining Co. of Virginia City to process ores from its lucrative Ophir Mine. Early accounts agree that the facility was constructed without any regard for expense. Some structures were cut out of granite, and the total cost was approximately $500,000. The mill was fairly

successful as long as the ores from the Ophir Mine averaged as much as $150 per ton. Kelly's 1862 directory reported that the mill employed 100 and had 36 stamps with a 100-ton-a-day capacity. At that time a railroad was being planned to connect the Ophir Mine with the mill; the railroad was never completed. In Kelly's 1863 directory the mill was described as having a 100 horsepower engine, 140 employees, 64 stamps, and only a 40-ton capacity. The Ophir Co. owned sections of woodland and approximately 700 acres of valley land adjacent to the mill. In the 1866 *State Mineralogist's Report* it was listed as having 72 stamps, 24 Freiburg barrels, and a 50-ton capacity. The Ophir Mine exhausted its rich ore in the mid-1860s, and the mill closed in 1866. Now only a few crumbling walls remain in a field along U.S. Highway 395 (Kelly, 1862, 100-01; Kelly, 1863, 130-31; Smith, 1943, 80-81; SMR, 1866, 150).

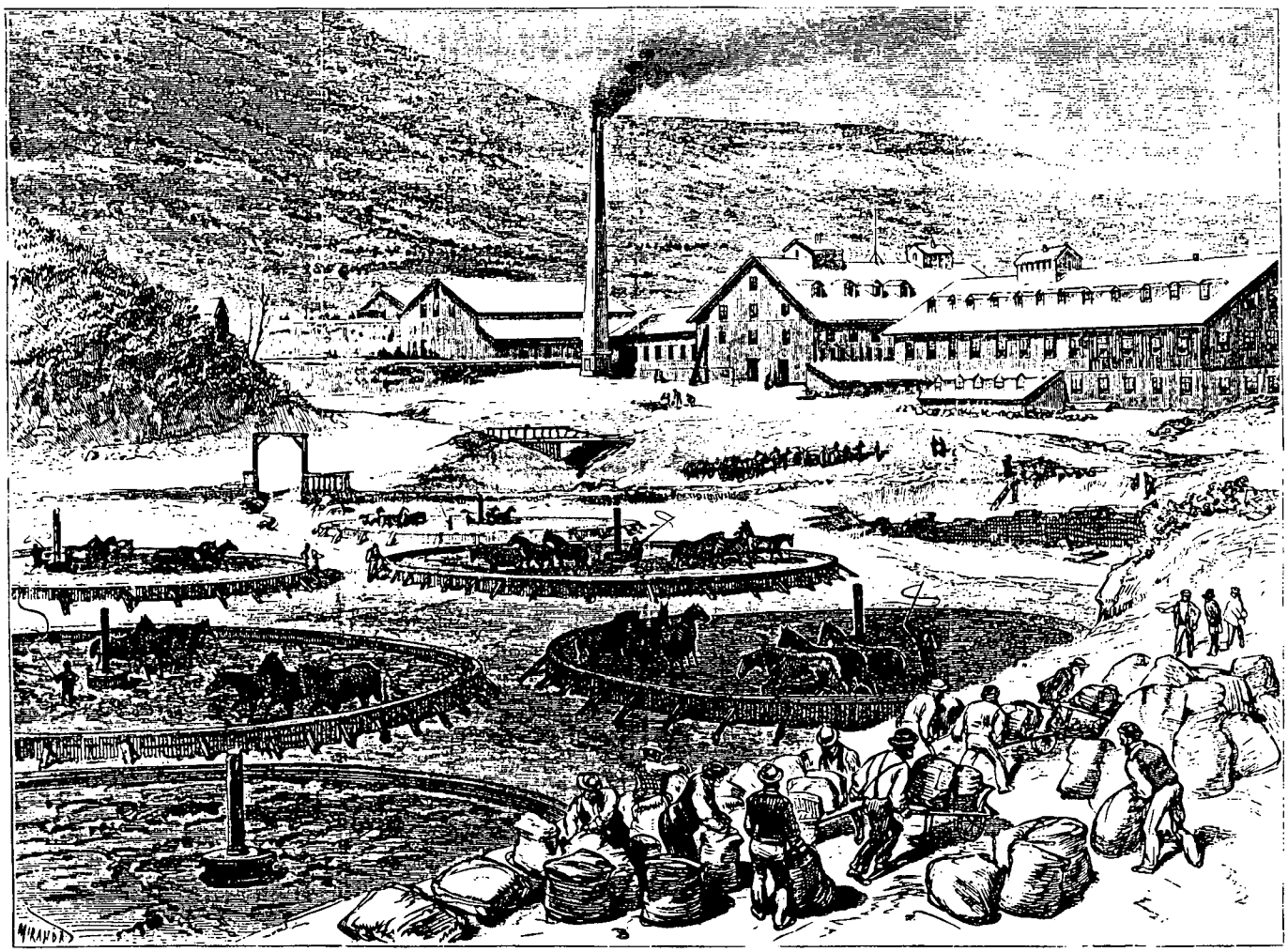
Atchison Mill: Large quartz mill built in Washoe City in 1861 and remodelled the next year. In Kelly's 1863 directory it was described as having a main building measuring 60 x 120 feet, 16 stamps, and a 25-ton-a-day capacity. It was driven by water from Browns and Steamboat creeks to the north through a ditch and flume about 3 1/2 miles in length. At that time the amalgamating department had 10 Wheeler pans, 4 Wakely pans, and 8 agitators; and the mill employed 15 hands. In 1865 it was reported to be both steam and water-powered with 16 stamps, 16 Wheeler pans, and 8 settlers. At that time it was running on Chollar-Potosi ore. In 1866 the Savage Mining Co. purchased the facility for $50,000 to be paid in ten monthly installments of $5,000 each with no interest. Ratay wrote that in 1871, after being idle for two years, the mill was overhauled and put back into operation (GHN, 1865, May 9, 3:1; Kelly, 1863, 132; Ratay, 1973, 410; SMR, 1866, 150; TE, 1866, Aug. 8, 4:2).

Other Washoe City mills included the Buckeye, Manhattan, Minnesota, New York, and Norths mills. In the 1866 *State Mineralogist's Report* the **Buckeye Mill** was listed as having 10 stamps, 8 Wheeler pans, and a 25-ton capacity. The same 1866 report listed the **Manhattan Mill** as being located in Allen Canyon north of Washoe City and as being water-powered with 24 stamps, 16 pans, and a 30-ton capacity. In 1868 the *Territorial Enterprise* wrote that the mill had been purchased by the Union Mill & Mining Co., a Bank of California affiliate. The **Minnesota Mill** was listed in the 1866 *State Mineralogist's Report* as having 16 stamps, 12 Wheeler pans, and a 25-ton capacity. Ratay noted that in the early 1870s it was being run by the Savage Mining Co. as a tailings mill. In 1866 the **New York Mill** was reported to be a steam mill with 24 stamps, 16 Varney pans, and a capacity of 50 tons a day; the *Territorial Enterprise* in 1868 reported that it had been bought by the Union Mill & Mining Co. Bancroft's 1862 map shows a **Norths Mill** located in Washoe City (Bancroft, 1862, map; Ratay, 1973, 410, foldout map between p. 448-49; SMR, 1866, 150; TE, 1868, June 7, 2:4).

Three other mills were located nearby. In 1866 the *Territorial Enterprise* wrote that the **Napa Mill** was located in Washoe Valley, had a 16-ton capacity, and was the only mill being supplied by the Ophir Mine. The 1866 *State Mineralogist's Report* reported the mill to be located in Galena and to have a 25-ton capacity. Ratay reported it to be both water and steam-powered.

The **Temelic Mill** was located one valley to the north of Washoe Valley at the lower end of Pleasant Valley. In 1863 Kelly reported it to have a 60 x 72-foot main building, a large water wheel 30 feet in diameter, 15 stamps, 8 Wheeler pans, and a 20-ton capacity. In 1865 the *Gold Hill News* reported it to be milling ore from the Savage Mine in Virginia City and the Burke & Hamilton Mine in Gold Hill. In the 1866 *State Mineralogist's Report* it was listed as having 15 stamps, 12 Wheeler pans, and a 25-ton capacity. The *Territorial Enterprise* in 1872 wrote that it had been idle for two years and was destroyed by arsonists.

Kelly reported in 1863 that the **Washoe Valley Reduction Works** was located on the west side of Washoe Valley in Franktown. At that time it was water-powered with 30 stamps and ranked next to the Ophir Mill in capacity (GHN, 1865, Jan. 4, 3:1; Kelly, 1863, 132, Ratay, 1973, 410; SMR, 1866, 150; TE, 1872, Feb. 22, 3:2).



The Gould and Curry Mill (*Frank Leslie's Illustrated Newspaper,* November 27, 1875, p. 193).

Chapter 16

MILLS WITH UNDETERMINED LOCATIONS

The following Comstock mills cannot be assigned precise enough geographic locations to be included in any of the preceding chapters. The 1866 *State Mineralogist's Report* listed the Atwood and Simcoe mills as being located in Storey County. The **Atwood Mill** was described as a 16-stamp steam mill burning 4 1/2 cords of wood a day and having 26 Knox and 2 Wheeler pans and a 20-ton capacity. The **Simcoe Mill** was reported to be a 16-stamp mill using 5 cords of wood a day and having 8 pans and a 25-ton capacity.

Apparently the following mills were located in Lyon County either near Silver City or Dayton. In 1865 the *Gold Hill News* listed the Atlantic, Cole & Co. and Stead & Hunt mills as being located in Lyon County. The **Atlantic Mill** was listed as a water-powered facility, having 2 arastras, a 3-ton capacity, and 2 employees, which was reducing ore from the Gray & Cook Mine. The **Cole & Co. Mill** was reported in 1865 to be water-powered with 5 stamps, 4 pans, 5 employees, and a 3-ton capacity; it was burning 1 1/2 cords of wood per week and was running on ore from the Imperial Mine in Gold Hill. The 1866 *State Mineralogist's Report* listed the same number of stamps, pans and capacity for this mill, but apparently it had converted to steam and was using 3 cords of wood per day. In 1865 the **Stead & Hunt Mill** was owned by a Mr. Stead and J.B. Hunt. At that time it was a 15-stamp steam mill burning 5 cords of wood a day and having 5 pans, a 22-ton capacity, and 11 employees and was running on ore from the Yellow Jacket Mine in Gold HIll. In 1864-65 the Collin's directory listed the **Eagle Mill** as being a 3-stamp, 2-pan, water-powered mill under construction. The 1866 *State Mineralogist's Report* listed it as a water-powered reduction facility having 5 stamps, 2 Knox pans, and a capacity of 15 tons. The same report listed the New York & Nevada Mill and D.L. Smith Mill as located in Lyon County. The **New York & Nevada Mill** was described as a steam mill using 5 1/2 cords of wood a day and having 20 stamps, 17 Hepburn pans, and a capacity of 25 tons. The **D.L. Smith Mill** was water-powered with 5 stamps, 4 pans, and a 4-ton capacity.

In 1866 the *Territorial Enterprise* mentioned a **Rules Mill** which was processing ore from the Chollar-Potosi Mine in Virginia City. The *Gold Hill News* in 1864 wrote of a **Darst & Harris Mill** which was receiving some ore from the Caledonia Mine in Gold Hill (Collins, 1864-65, 318; GHN, 1864, Jan. 13, 3:1; 1865, June 5, 3:2; SMR, 1866, 148-49; TE, 1866, Oct. 6, 3:1).

BIBLIOGRAPHY

Below are listed monographs, maps and some serials referred to in researching this text. The numerous references to the *Territorial Enterprise, Gold Hill News,* other newspaper and journal articles, and court house records are given in the lists of references in the main text.

Angel, Myron (ed.), 1881, History of Nevada: Oakland, California, Thompson & West, 680 p.

Ansari, Mary B., 1986, Comstock Place Names; the Names of Storey County, Nevada, Camp Nevada Monograph No. 7: Reno, Camp Nevada, 59 p.

Bancroft, Hubert Howe, 1862, Bancroft's Map of the Washoe Silver Region of the Nevada Territory...: San Francisco, H.H. Bancroft & Co., 1 sheet.

_____, 1890, The Works of Hubert Howe Bancroft, Volume 25, History of Nevada, Colorado and Wyoming: San Francisco, The History Co. Publishers, 828 p.

Becker, George F., 1882, Atlas to Accompany the Monograph on the Geology of the Comstock Lode and the Washoe District: Washington, D.C., United States Geological Survey, 21 sheets.

Bonham, Harold F. and Keith G. Papke, 1969, Geology and Mineral Deposits of Washoe and Storey Counties, Nevada: Nevada Bureau of Mines & Geology Bulletin 70, 140 p.

Browne, Ross E., 1874, Map of the Townsite of Silver City, Lyon County, Nevada: (Virginia City, Nevada), 1 sheet, 1 inch = 100 feet (manuscript map on file at the Nevada Historical Society).

Carlson, Helen S., 1955, Names of Mines of the Comstock: Reno, Master's Thesis, University of Nevada, 111 p.

_____, 1974, Nevada Place Names; a Geographical Dictionary: Reno, University of Nevada Press, 282 p.

Church, John A., 1879, The Comstock Lode; Its Formation and History: New York, Wiley, 226 p.

Cleator, Cora M., 1913, The Significance of the Nomenclature in Douglas, Ormsby and Storey Counties: Nevada Historical Society, Third Biennial Report, 1911-1912, p. 185-205.

Collins, Charles, 1864-65, Mercantile Guide and Directory for Virginia City, Gold Hill, Silver City, and American City...: San Francisco, Agnew & Deffenbach, 386 p.

Comp, T. Allan (Project Director), 1980, The 1980 Comstock Project; the Comstock, an Inventory of Historic and Natural Sites: Washington, D.C., United States Department of the Interior, (no pagination and no entry numbers).

Comstock Papers Nos. 1-16, 1876-77, Mining and Scientific Press, v. 33, July-December and v. 34, January-February (anonymous; presumably authored by Henry DeGroot).

Dangberg, Grace, 1975, Conflict on the Carson: Minden, Nevada, Carson Valley Historical Society, 467 p.

Davis, Sam P., (ed.), 1913, The History of Nevada: Los Angeles, The Elms Publishing Co., 2 vols., 1291 p.

DeGroot, Henry, see Comstock Papers.

De Quille, Dan, 1947, The Big Bonanza: New York, Alfred A. Knopf, 439 p. (originally published 1876 by American Pub. Co.).

Dodson, Calvin J., 1928, Reminiscences of Carson City as Told by Alfred Chartz: manuscript, 5 p., (on file at the Nevada Historical Society).

Doten, Alfred R., 1973, The Journals of Alfred Doten, 1849-1903: Reno, University of Nevada Press, edited by Walter Van Tilburg Clark, 3 vols., 2381 p.

Galloway, John D., 1947, Early Engineering Works Contributory to the Comstock: Nevada Bureau of Mines & Geology Bulletin 45 (University of Nevada Bulletin, v. 41, no. 5), 102 p.

Gianella, Vincent P., 1936, Geology of the Silver City District and the Southern Portion of the Comstock Lode, Nevada: Nevada Bureau of Mines & Geology Bulletin 29 (University of Nevada Bulletin, v. 30, no. 9), 108 p.

Glass, Al and Mary Ellen Glass, (1975), Western Nevada: Reno, Nevada Historical Society Guide Book Series, 51 p.
Harris, Robert P., 1973, Nevada Postal History, 1861 to 1972: Reno, Bonanza Press, 64 p.
Kelly, J. Wells, 1862, First Directory of Nevada Territory...: San Francisco, Commercial Steam Presses, Valentine & Co., 266 p.
_____, 1863, Second Directory of Nevada Territory...: San Francisco, Valentine & Co., 486 p.
Lawson, J.S. and Butler Ives, 1861, "Township Surveys of the Lake Tahoe Area, Ormsby County, Territory of Nevada": (manuscript map on file at the Nevada Historical Society).
Lewis, Frank W., c. 1962, List of (Storey County) Claims Compiled from the Unofficial Records of the Bureau of Land Management: pagination separate for each district (on file at the Storey County Assessor's Office).
Lincoln, Francis C., 1923, Mining Districts and Mineral Resources of Nevada: Reno, Nevada, Reno Newsletter Publishing Co., 295 p.
Lord, Eliot, 1883, Comstock Mining and Miners: Washington, D.C. United States Geological Survey Monograph 4, 451 p.
Map of Survey of the Virginia & El Dorado Narrow Gauge Railroad, 1875: manuscript map, 1 sheet (on file at the Nevada Historical Society).
Marsh, Andrew J., 1972, Letters from Nevada Territory, 1861-62: (Carson City), Legislative Counsel Bureau, 743 p.
McLane, Alvin R., 1981, "Washoe"; How Did the Name Get Started?: Washoe Rambler, v. 5, no. 1, Spring, 1981, 14-15.
Moore, James G. and N.L. Archbald, 1969, Geology and Mineral Deposits of Lyon, Douglas and Ormsby Counties, Nevada: Nevada Bureau of Mines & Geology Bulletin 75, 45 p.
Moran, W.T., 1923, Map of Storey County, State of Nevada: Virginia City, Nevada, 1 sheet (on file at the Storey County Recorder's Office).
Mordy, Brooke D. and Donald L. McCaughey, 1968, Nevada Historical Sites: Reno, Western Studies Center, Desert Research Institute, 283 p.
Nevada Centennial Commission for Early Day Families, 1964, Storey County Early Day Family Records: Reno, Nevada Centennial Commission, 168 p.
Nevada Historical Society, 1911, Second Biennial Report, 1909-1910: (Carson City), 181 p.
_____, 1966, Field Trip No. 1: (Reno, Nevada Historical Society), 10 p.
_____, 1977-78, Carson City Historical Sites Survey (file folders on file at the Nevada Historical Society).
Ohmert, Audrey Winifred, 1911, The Significance of the Nomenclature in Washoe County, Nevada: Nevada Historical Society, Second Biennial Report, 1909-1910, p. 82-95.
Paher, Stanley W., 1970, Nevada Ghost Towns and Mining Camps: Berkeley, California, Howell-North Books, 492 p.
Parkinson, T.D., 1874, Map of the Comstock Lode and the Washoe Mining Claims Embracing the District of Virginia, Gold Hill, Devils Gate, Silver Star, and Flowery: San Francisco, A.L. Bancroft & Co. Lith., 1 sheet, 1 inch = 600 feet.
Ratay, Myra Sauer, 1973, Pioneers of the Ponderosa; How Washoe Valley Rescued the Comstock: Sparks, Nevada, Western Printing & Publishing Co., 470 p.
Sanborn-Perris Map Co., 1890, Virginia City Including Gold Hill, Storey County Nevada: New York, Sanborn-Perris Map Co., 13 sheets.
Sanborn Map Co., 1907, Virginia City Including Gold Hill, Storey County, Nevada: New York, Sanborn Map Co.
_____, 1923, Virginia City Including Gold Hill, Storey County, Nevada: New York, Sanborn Map Co. 6 sheets.
Schilling, John, 1976, Metal Mining Districts of Nevada: Nevada Bureau of Mines & Geology Map 37, 3d ed., 1 sheet, scale 1:1,000,000.
Shamberger, Hugh A., 1969, The Story of the Water Supply for the Comstock: United States Geological Survey Professional Paper 779, 53 p.

Smith, Alfred M., 1932, The Mine and Mills of Silver City, Nevada: Nevada Bureau of Mines & Geology Bulletin 15 (University of Nevada Bulletin, v. 26, no. 5), 28 p.
Smith, Grant H., 1943, The History of the Comstock Lode 1850-1920: Nevada Bureau of Mines & Geology Bulletin 37 (University of Nevada Bulletin v. 37, no. 3), 305 p.
State Mineralogist's Report, issued annually for 1866 and biennially for 1867-1868, 1869-1870, 1871-1872, 1873-1874, 1875-1876, and 1877-1878: Carson City, Nevada.
Stoddard, Carl and J.A. Carpenter, 1950, Mineral Resources of Storey and Lyon Counties, Nevada: Nevada Bureau of Mines & Geology Bulletin 49 (University of Nevada Bulletin, v. 44, no. 1), 115 p.
Stuart, E.E., 1909, Nevada's Mineral Resources: Carson City, Nevada, State Printing Office, 159 p.
Texas Tech University, History of Engineering Program, 1980, Nevada Historic Engineering Sites Inventory Phase 1: Lubbock, TX, Texas Tech University, no pagination.
W.P.A., see Works Projects Administration.
Wheeler, George M., 1876-77, Topographical Map of Washoe Mining Region: (Washington, D.C.) U.S. Army, Corps of Engineers, 1 sheet.
Works Project Administration and Nevada Bureau of Mines, (1941), Individual Histories of Mines of the Comstock: (Reno), 56 articles each with separate pagination, (on file at the Mines Library, University of Nevada, Reno).
Wright, William, see De Quille, Dan.

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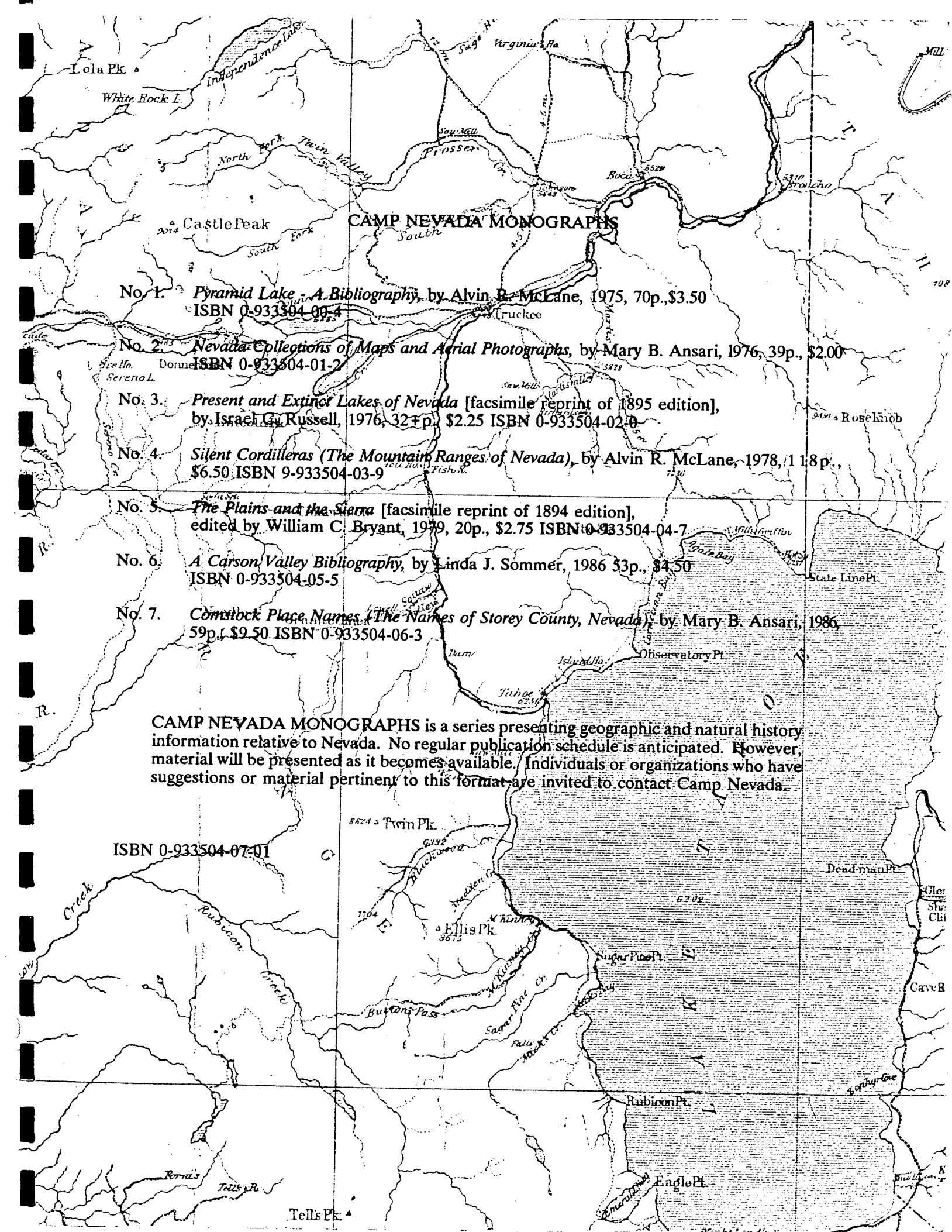

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